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PAUL F. MUNROE, M.D.

Assistant Surgeon to the New York State Women's Hospital.

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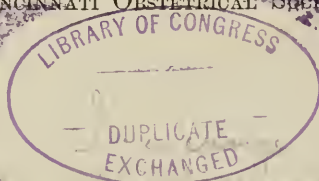
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CONTRIBUTORS TO VOL. X.

ANDERSON, JEROME A., Hill's Ferry, Cal.
ANWAY, JOSEPH D., New York.
BROWNE, B. B., Baltimore.
BUSEY, SAMUEL C., Washington.
CAMPBELL, A. SIBLEY, Augusta, Ga.
CHADWICK, JAMES R., Boston.
CHAMBERLAIN, WM. M., New York.
CHURCHILL, J. A., Cross River, Conn.
COLEMAN, JOHN S., Augusta, Ga.
CUTTER, EPHRAIM, Cambridge, Mass.
ELLINGER, LEOPOLD, Stuttgart, Germany.
EMMET, THOMAS ADDIS, New York.
FORMENTO, F., New Orleans.
FROST, C. H., Adams Station, Tenn.
FUNDENBERG, GEORGE B., Cumberland, Md.
GILLETTE, WALTER R., New York.
HESSE, RUDOLF, Brooklyn, N. Y.
HYATT, H. OTIS, Kinston, N. C.
JACOBI, ABRAHAM, New York.
JENKS, EDWARD W., Detroit, Mich.
LAMADRID, JULIO J., Brooklyn, N. Y.
LUSK, WILLIAM T., New York.
MANN, MATTHEW D., New York.
PALLEN, MONTROSE A., New York.
PARTRIDGE, EDWARD L., New York.
REED, W. F., Kalida, Ohio.
REIMANN, R., Kiew, Russia.
SIMS, J. MARION, New York.
SKENE, ALEX. J. C., Brooklyn, N. Y.
SMYTHE, A. G., Baldwin, Miss.
SUSSDORF, GEORGE E., New York.
TRENHOLME, E. H., Montreal.
TRUSH, J., Cincinnati.
TURNIPSEED, E. B., Columbia, S. C.
WARREN, JOHN S., New York.

the
NEW YORK OBSTETRICAL SOCIETY,
the
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the
CINCINNATI OBSTETRICAL SOCIETY.



CONTENTS OF VOLUME X.

ORIGINAL COMMUNICATIONS.

	PAGE
1. BUSEY: Congenital Occlusion and Dilatation of Lymph Channels	1, 223, 420, 571
2. EMMET: Removal of a Fibrous Tumor from the Uterus by Traction, with Remarks on the Operation.....	24
3. TURNIPSEED: Some Facts in Regard to the Anatomical Differences between the Negro and the White Race	32
4. WARREN: Dyspareunia.....	34
5. BROWNE: A Case of Fibroid Tumor of the Uterus causing Eclampsia, with Remarks on Uterine Fibroids in General, and on the Causes of Puerperal and Non-puerperal Eclampsia	38
6. REIMANN: On the Simultaneous Entrance of both Heads of Twins into the Pelvis	47
7. CAMPBELL: Pneumatic Pressure and the Genu-pectoral Posture in the Reduction of Uterine Luxations.....	62
8. ANWAY: New York Woman's Hospital, service of Dr. Emmet, Complicated Vesico-urethro-vaginal Fistula, Restoration of Urethra, Closure of Fistula	75
9. HESSE: Ovarian Cyst treated by Electrolysis	80
10. CHAMBERLAIN: The Relation of the Urinary Organs to Puerperal Diseases	177
11. PALLEN: Some Suggestions with Regard to the Insanities of Females	206
12. ELLINGER: On Extra-abdominal Version	218
13. HYATT: Note on the Normal Anatomy of the Vulvo-vaginal Orifice..	353
14. FROST: Some Corroborative Facts in Regard to the Anatomical Difference between the Negro and White Races	258
15. JACOBI: The Influence of Menstruation, Pregnancy, and Medicines on Lactation	353
16. PALLEN: Résumé on Incision and Division of the Cervix Uteri for Dysmenorrhea and Sterility.....	364
17. TRUSH: Retention of the Placenta in Labor at Term—Report of a Case, with Critical Remarks	389
18. LUSK: Morphia in Child-birth.....	413
19. CHURCHILL: A Case of Simultaneous Entrance of Both Heads of Twins into the Pelvis	446
20. CHADWICK: Note on a Specimen of a Recently Delivered Uterus with Adherent Placenta.....	448
21. TRENHOLME: A Case of Extirpation of the Uterus, together with its Appendages for a Fibroid Tumor	452
22. FORMENTO: Case of Sympathetic Hystero-neurosis of the Stomach.	455
23. COLEMAN: Case of Transverse Septum of the Vagina obstructing Delivery.....	459
24. FUNDENBERG: Retroversion and Impaction of the Gravid Uterus, complicated with Cancer, the Pregnancy continuing to Term...	463

	PAGE
25. LAMADRID: A Case illustrating "The Influence on the Infant of Medicines, particularly Narcotics, administered to the Mother during Pregnancy and Labor".....	466
26. ANDERSON: Disappearance of a Uterine Fibroid under the Use of Ergot.....	470
27. SUSSDORFF: A Contribution to the Differential Diagnosis between Hollow Uterine Polypus and Complete Inversion of the Uterus..	545
28. PARTRIDGE: The Use of Opium and Morphia during Pregnancy and Parturition.....	558
29. CUTTER: Food as a Medicine in Cases of Uterine Fibroids	562
30. JENKS: Report of a Successful Case of Cesarean Section after Seven Days' Labor with some Comments on the Operation.....	606
31. GILLETTE: The Narcotic Effect of Morphia on the New-born Child, when administered to the Mother in Labor.....	612
32. SKENE: A Second Successful Case of Gastro-Elytrotomy.....	623
33. COLEMAN: Cephalic Version by the External Bi-polar Method—Arrest of Profuse Post-partum Hemorrhage with Tincture of Iodine. .	631
34. REED: A Case of Simultaneous Entrance of both Heads of Twins into the Pelvis	634

OBITUARY: Gustav Simon, by J. Marion Sims.....	80
--	----

CORRESPONDENCE.

HYATT: The Normal Anatomy of the Vulvo-vaginal Orifice	635
SMYTHE: The Position of the Hymen in the Negro Race.....	638

EDITORIAL.....	640
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SOCIETY TRANSACTIONS.

NEW YORK OBSTETRICAL SOCIETY.

1. MANN: Pathologist's Report on Dr. Skene's Case of Exfoliation of the Mucons Membrane of the Uterus, as the Result of Interrupted Gestation	84
2. EMMET: Case of Removal of Uterine Fibroid by Traction... ..	84
3. LENTE: Operation for Atresia of the Vagina in a Married Woman... ..	85
4. GILLETTE: A Case of Pseudo-ovarian Cyst.....	87
5. WARREN: Dyspareunia.....	89
6. MACKENZIE: Case of Hydrorrhea	90
7. HANKS: Improved Tracheotomy Instruments.....	92
8. JANVRIN: Case of Puerperal Phlebitis.....	93
9. CHAMBERLAIN: Case of Hystero-neurosis of the Stomach	98
10. GREEN: Case of Strangulation of the Small Intestine by Uterorectal Adhesions.....	99
11. GILLETTE: Case of Intussusception in a Child nine months old. . . .	100
12. WARD: Case of Dystocia caused by extreme Anteversion of the Uterus and Pendulous Abdomen	101
13. SKENE: Case of Intermittent Metrorrhagia during Gestation.....	102

	PAGE
14. MUNDÉ: Case of Twins; both Children Decomposed; Retention of the Second Child and both Placentæ for Two Days after the Birth of the First Child	103
15. NOEGGERATH: New Operation for the Removal of the Uterus with its Peritoneal Envelope through the Vagina for Carcinoma	105
16. CLEVELAND: Case of Retroversion of the Uterus, complicated by Adhesions and Prolapse of the Left Ovary	107
17. NICOLL: Case of Death from Rupture of the Fallopian Tube and Intraperitoneal Hemorrhage	111
18. THOMAS: Case of Cancer of the Female Urethra	114
19. GREEN: Case of Tetanie, or Intermittent Tetanus	115
20. THOMAS: Report on the Treatment of Solid Uterine Fibroids by Electrolysis, by Drs. Gilman Kimball, of Lowell, and Ephraim Cutter, of Boston, Mass.	117
21. THOMAS: Fatal Ovariectomy Apparently Consequent on the Sudden Escape of a small Amount of Blood into the Peritoneal Cavity	260
22. NICOLL: Case of Incision of the Cervix, with Death on the Fifteenth Day	264
23. NOEGGERATH: Specimen of a Uterus, with Appendages and Kidneys, from a Woman who had Died of Cancer, in whom the Cervix had been Amputated by Galvano-Cautery Seven Months previously ..	266
24. THOMAS: Fibrous Polypus Simulating Inversion	266
25. BLAKE: Condensed Milk as a Diet for Young Infants, where a Substitute for Breast-Milk is needed	267
26. HANKS: Fatal case of Rupture of the Uterus	271
27. HANKS: Case of Rupture of the Vagina—Death from Shock and Loss of Blood	272
28. JACOBI: Nursing-bottle specially adapted for Babies too Weak to Nurse	274
29. WALKER: Small Copper Cent swallowed by a Child of Three Years, and retained more than a Month in the Intestinal Tract	275
30. HANKS: Spray-producing Apparatus for throwing Carbolic Acid Spray in Operations on the Antiseptic Principle	277
31. WATTS: Case of Double Vagina with Single Uterus	279
32. GREEN: Case of Retro-uterine Sarcoma of Vaginal Origin	281
33. Pallen: The Insanities of Females	284
34. GILLETTE: Case of Rupture of the Vestibule during Labor	286
35. GILLETTE: A New Operation for the Cure of Rectocele and Cystocele	288
36. THOMAS: Resuscitation of a New-born Child by Faradization	291
37. BYRNE: Specimen of a Uterus, the Cervix of which was Amputated by Galvano-Cautery Four Years previously	292
38. THOMAS: Belladonna Poisoning from the Application of the Extract to Dilate a Supposed Rigid Os	298
39. MATTISON: Eclampsia in the Mother treated by Hypodermic Injection of Morphia, with Asphyxia and subsequent Convulsions in the Child	299
40. MUNDÉ, BARKER, PEASLEE, CHAMBERLAIN, GILLETTE, THOMAS, and others: The Influence on the Fetus of Medicines, particularly Narcotics, administered to the Mother during Pregnancy and Labor	300
41. HUNTER: Specimen of Dysmenorrheal Membrane	642
42. THOMAS: Pediculated Tumor of the Pudenda	642
43. JACOBI: Case of a Boy with Partial Absence of the Right Parietal Bone	643
44. CHAMBERLAIN: Series of Three Glass Instruments—catheter, uterine applicator, and uterine injector (with three woodcuts)	643
45. WALKER: Placenta, with the History of Concealed Hemorrhage ..	644
46. THOMAS: Description of a New Instrument, the Serrated Scoop, for the Detachment of Sessile Uterine Fibroids (with seven woodcuts)	645

	PAGE
47. STUART: Obstetric Forceps, with Short and Long Handles (with one woodcut).....	650
48. THOMAS: A Case of Placenta Previa treated by bringing on Premature Delivery.....	652
49. SKENE: The Cause of Convulsions in Children born of Uremic Mothers.....	653
50. PEASLEE: Specimen of Coagulated Mucus passed by a Patient with Endocolitis.....	662
51. WALKER: Pelvic Peritonitis simulating Cancer.....	663
52. WATTS: Amenorrhea from Sloughing away of the Uterine Mucous Membrane.....	664
53. HUNTER: Suppuration of the Vulvo-vaginal Gland.....	665
54. MANN: Uterus Bicornis, with Partial Vaginal Septum (with three woodcuts).....	666
55. MANN: Uterus Bicornis et Vagina Septa (with one woodcut).....	668
56. MUNDÉ: Nursing Sore Mouth.....	668
57. THOMAS: Case of Supposed Rupture of the Uterus, with Fatal Hemorrhage into the Abdominal Cavity.....	668
58. MACKENZIE: A Case of Puerperal Septic Pyemia, with Metastatic Panophthalmia.....	669
59. NOEGGERATH: Case of Recurrent Metritis, followed by Neuralgia, successfully treated by Salicylic Acid.....	672
60. PEASLEE: Myxoma of the Mamma.....	673
61. MUNDÉ: Case of Cyst of the Vagina.....	673

PHILADELPHIA OBSTETRICAL SOCIETY.

1. SAVERY: Abortion consequent on Fatty Degeneration of the Placenta	335
2. PARISH: Death of a Fetus caused by Fright of the Mother—Puerperal Septicæmic Pyæmia.....	340
3. MORRIS: Case of Rupture of the Perineum, with Laceration of the Vestibule Anterior to the Urethra.....	342
4. SMITH: Rupture of a Uterus by Molesworth's Dilator.....	346
5. SMITH: Transfusion successfully performed on a Child.....	349
6. GOODELL: Case of Sterility.....	121
7. GOODELL: Fibroid Tumor Removed by Traction from the Uterus..	123
8. TAYLOR: Two Cases of Puerperal Convulsions.....	125
9. KELLY: Placenta Previa.....	472
10. SINKLER: New Galvano-Cautery Battery.....	477
11. LUDLOW: Sodium Chlorate.....	477
12. GOODELL: Rupture of the Womb.....	478
13. CLEEMAN: Hemorrhage from Placenta Previa.....	483
14. THOMAS: Effect of Prolonged Labor upon the Life of the Child....	483
15. PARISH: Death from Rupture of a Cyst of the Broad Ligament....	484
16. NEBINGER: Rupture of Ovarian Cysts.....	488
17. PARISH: Treatment of Supra-Vaginal Elongation of the Cervix Uteri.....	489

CINCINNATI OBSTETRICAL SOCIETY.

1. McMECHAN: Delivery by External Pressure.....	490
2. CLEVELAND: A Case of Pregnancy, with Elongated, Hypertrophic, and Ulcerated Cervix.....	497
3. MILES: Case of Fibroid Tumor of the Uterus Removed by Avulsion	505
4. TRUSH: Retention of the Placenta.....	506

	PAGE
5. WRIGHT: Stomatitis Materna.....	511
6. REAMY: Impacted Face Presentation.....	514
7. CARRICK: Rigidity of the Os Uteri.....	678
8. PALMER: Fibroid Tumors complicated by Tetanus.....	686

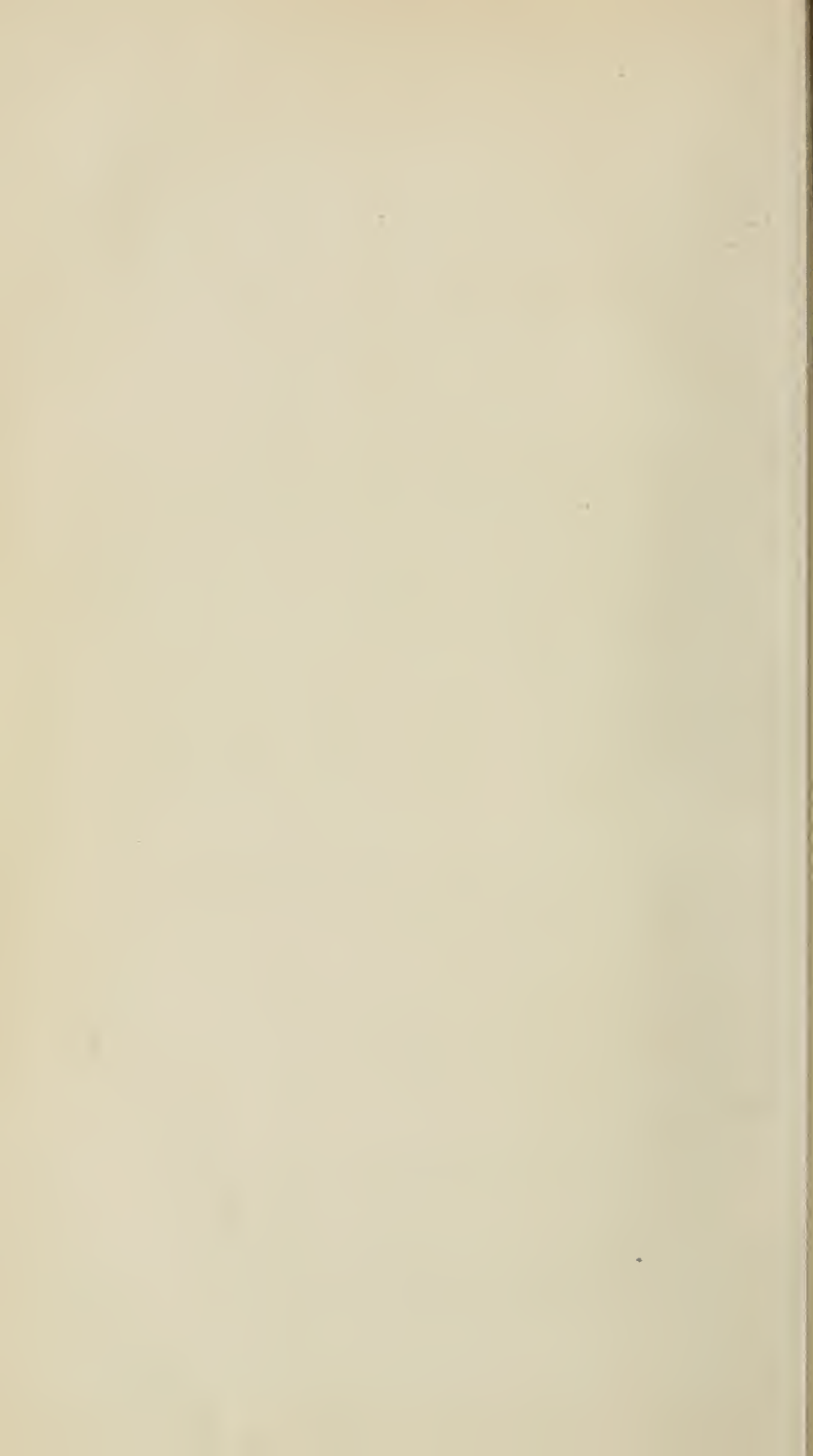
AMERICAN GYNECOLOGICAL SOCIETY. (ABSTRACT.)

1. CHADWICK: A New Theory as to the Function of the Third Sphincter Ani, so called.....	520
2. BYRNE: Excision of the Cervix Uteri; its Indications and Methods.....	520
3. DALTON: Report of the Corpus Luteum.....	523
4. LYMAN: Dilatation of the Cervix Uteri for the Arrest of Uterine Hemorrhage.....	526
5. SKENE: The Principles of Gynecological Surgery Applied to Obstetrical Operations.....	530
6. ENGELMANN: Researches on the Mucous Membrane of the Uterus..	537
7. LUSK: On the Necessity of Caution in the Employment of Chloroform during Labor.....	538
8. BARKER: The President's Address.....	539
9. VAN DE WARKER: The Intra-uterine Treatment of Flexions.....	694
10. GOODELL: Vaginal Ovariectomy	708
11. BATTEY: Battey's Operation—Removal of the Ovaries	711
12. WILSON: Subsulphate of Iron as an Antiseptic in Surgery of the Pelvis	715
13. PARVIN: Tetanus after Ovariectomy.....	716
14. ATLEE: Sarcoma of the Ovaries.....	718

REPORT ON OBSTETRICS FOR 1875-76. By M. D. MANN, M.D... 130

REVIEWS AND NOTICES OF BOOKS.

1. PLAYFAIR: A Treatise on the Science and Practice of Midwifery...	159
2. MEADOWS: A Manual of Midwifery.....	176
3. Transactions of the American Gynecological Society.....	542



INDEX TO VOL. X.

A

	PAGE
Abortion from fatty degeneration of the placenta. W. Savery.....	335
Absence, partial, of right parietal bone. Jacobi	643
A contribution to the differential diagnosis between hollow uterine poly- pus and complete inversion of the uterus. G. E. Sussdorff....	545
Against the pendulum movement in delivery by forceps. J. Mathews Duncan.....	148
Amenorrhea from sloughing away of the uterine mucous membrane. R. Watts.....	664
Anatomical differences between the negro and white races. Edward B. Turnipseed.....	32
Anatomical differences between the negro and white races. C. H. Fort... " " " " A. G. Smythe.	258 638
Anatomy of the vulvo-vaginal orifice. H. Otis Hyatt.....	253, 635
Anderson, Jerome A. Disappearance of a uterine fibroid under the use of ergot.....	470
Anway, Joseph D. Complicated vesico-urethro-vaginal fistula—restora- tion of urethra—closure of fistula—cure.....	74
Atlee, W. L. Sarcoma of the ovaries.....	718
Atresia, vagina operation for. F. D. Lente.....	85

B.

Barker, Fordyce. The President's Address to the American Gynecological Society.....	539
Batthey's operation. Removal of the ovaries.....	711
Belladonna-poisoning from the application of the extract to dilate a supposed rigid os. T. G. Thomas.....	298
Blake, John C. Condensed-milk as a diet for young infants where a substitute for breast-milk is needed.....	267
Browne, B. B. A case of fibroid tumor of the uterus causing eclampsia ; with remarks on uterine fibroids in general and on the causes of puerperal and non-puerperal eclampsia.....	38
Busey, Samuel C. Congenital occlusion and dilatation of lymph channels.....1, 223, 420.	571
Byford. Dilatation of the cervix uteri for the arrest of uterine hemorrhage.....	526
Byrne, John. Specimen of uterus, the cervix of which was amputated by galvano-cautery four years previously.....	292
“ “ Excision of the cervix uteri—its indications and methods.....	520, 531

C.

Campbell, A. Sibley. Pneumatic pressure and the genu-pectoral posture
in reduction of uterine luxation..... 62

	PAGE
Cancer of the female urethra. T. G. Thomas.....	114
Carrick. Rigidity of the os uteri.....	678
Cephalic version by the external bi-polar method. J. S. Coleman.....	631
Cesarean section. Success, after seven days' labor, with comments on the operation. E. W. Jenks.....	606
Chadwick, James R. A new theory of the functions of the third sphincter ani, so-called.....	520
“ “ Note on a specimen of recently delivered uterus with adherent placenta.....	448
Chamberlain, Wm. M. Relation of the urinary organs to puerperal diseases.....	177
“ “ Glass instruments—catheter, uterine applicator, and uterine injector.....	643
Chloral in labor, use of. Friedländer.....	141
Chloroform in labor, necessity of caution in the use of. Lusk.....	538
Churchill. Simultaneous entrance of both heads of twins into the pelvis.....	446
Circulation in pregnant women. Barnes.....	130
Cleeman. Hemorrhage from placenta previa.....	493
Cleveland. A case of pregnancy—hypertrophied and ulcerated cervix... ..	497
Coleman, John S. Case of transverse septum of the vagina obstructing delivery.	459
“ “ Cephalic version by external bi-polar method and arrest of post-partum hemorrhage with tr. iodine....	631
Compressibility of the fetal head by forceps. Hugh L. Hodge.....	146
Condensed milk as an infant diet. John E. Blake.....	267
Concealed hemorrhage. Walker.....	644
Convulsions in children born of uremic mothers. Skene.....	653
Congenital occlusion and dilatation of lymph channels. Busey....1, 223,	420
Corpus luteum, report on the. J. C. Dalton.....	523
Craniotomy, to avoid injury to the soft parts in. Skene.....	151
Credé's method of delivering the placenta.....	152
Cutter, E. Food as a medicine in cases of uterine fibroids.....	562
Cystocele and rectocele, a new operation for the cure of. W. R. Gillette.....	288
Cyst of the broad ligament, death from rupture of. Parish.....	484
“ vagina, case of. Mundé.....	673

D.

Dalton, J. C. Report on the corpus luteum.....	523
Death from rupture of the Fallopian tube and intra-peritoneal hemorrhage. Henry D. Nicoll.....	111
Death of fetus caused by fright of the mother. Wm. H. Parish.....	340
Delivery in narrow pelvis. J. C. Taylor.....	151
“ by external pressure. McMechan.....	490
Diagnosis of pregnancy by mammary papilla.....	131
Dilatation of the cervix uteri for arrest of uterine hemorrhage. Byford.....	526
Dyspareunia. Jno. S. Warren.....	34, 89
Duncan, J. M. Against the pendulum movement in delivery by forceps.....	148
Dysmenorrhea and sterility, incision and division of the cervix uteri for. Pallen.....	364
Dysmenorrheal membrane, specimen of. Hunter.....	642
Dystocia caused by extreme uterine anteversion and pendulous abdomen. Chas. S. Ward.....	101

E.

Eclampsia in the mother treated by the hypodermic use of morphia, with asphyxia and subsequent convulsions in the child. J. B. Mattison.....	299
“ puerperal. Duncan.....	153

Electrolysis of an ovarian cyst. R. Hesse.....	78
Ellinger, Leopold. On extra-abdominal version.....	218
Elongated, hypertrophied and ulcerated cervix, pregnancy with. Cleveland.....	497
Elongation of the cervix, treatment of supra-vaginal. Parish.....	489
Emmet, T. Addis. Removal of a fibrous tumor from the uterus by traction, with remarks on the operation.....	24, 84
Endocolitis, specimen of coagulated mucus passed by a patient with chronic. Peaslee.....	662
Engelmann. Researches on the uterine mucous membrane.....	537
Epilepsy in pregnant women.....	153
Excision of the cervix uteri—its indications and methods. Byrne.....	520, 531
Exfoliation of the uterine mucous membrane from interrupted gestation. Skene.....	84
Extirpation of the uterus and appendages for a fibroid tumor. E. H. Trenholme.....	452
Extra-abdominal version. Leopold Ellinger.....	218

F.

Face-presentation, impacted. T. A. Reamy.....	514
Fibroid tumor removed by traction from the uterus. Goodell.....	123
“ disappearance of, under the use of ergot. J. A. Anderson....	470
“ food as a medicine in cases of. E. Cutter.....	562
“ removed by avulsion. A. J. Miles.....	505
“ complicated with tetanus. Palmer.....	686
“ of the uterus causing eclampsia, with remarks on fibroid tumors in general, and on the causes of puerperal and non-puerperal eclampsia. B. B. Browne.....	38
Fibrous tumor of the uterus removed by traction. T. Addis Emmet...24,	84
“ polypus simulating inversion. T. G. Thomas.....	266
Flexions, intra-uterine, treatment of. E. Van de Warker.....	694
Food as a medicine in fibroids, uterine. E. Cutter.....	562
Formento, F. Case of sympathetic hysteroneurosis of the stomach....	455
Frost, C. H. Anatomical differences between the negro and white race..	258
Fundenberg, George B. Retroversion and impaction of the gravid uterus, complicated with cancer, the pregnancy continuing to term.....	462

G.

Galvano-cautery battery, new. Sinkler, W.....	477
Gastro-elytrotomy, second successful case of. A. J. C. Skene.....	623
Germ-pectoral posture in reducing uterine luxations. A. Sibley Campbell.....	62
Gillette, Walter R. A case of pseudo-ovarian cyst.....	87
“ “ Case of intussusception in a child nine months old..	101
“ “ Case of rupture of the vestibule during labor.....	286
“ “ A new operation for the cure of rectocele and cystocele.....	288
“ “ The narcotic effects of morphia on the new-born infant when administered to the mother in labor...	612
Glass instruments. Chamberlain.....	643
Goodell, Wm. Vaginal ovariectomy.....	708
Green, James S. Case of strangulation of the small intestines in utero-rectal adhesions.....	99
Gustav, Simon, obituary.....	80

H.

	PAGE
Hanks, Horace T. Improved tracheotomy instruments.....	92
“ “ Fatal case of rupture of the uterus.....	271
“ “ Fatal case of rupture of the uterus and vagina—loss of blood	273
“ “ Spray-producer for use during operations for disinfection.....	277
Hemorrhage, concealed. Brunton.....	143
“ post partum.....	152
“ death from intraperitoneal and from rupture of the fal- lopian tube. Henry D. Nicoll.....	111
Hesse, R. Ovarian cyst treated by electrolysis.....	78
Hunter. Specimen of dysmenorrheal membrane.....	642
“ Suppuration of the vulvo-vaginal gland.....	665
Hydorrhea, case of. Colin Mackenzie.....	90
Hymen, in the negro race, position of. Smythe, A. G.....	638
Hystero-neurosis of the stomach. Chamberlain.....	98
“ “ “ sympathetic. F. Formento.....	455

I.

Incision of the cervix. Death on the fifteenth day. Nicoll.....	264
Infant diet, condensed milk as. Jno. E. Blake.....	267
Influence on the fetus of medicines, particularly narcotics administered to the mother during pregnancy and labor. Mundé, Barker, Chamberlain, Gillette, Peaslee, and others.....	300
Same, by J. J. Lamadrid.....	466
“ Wm. T. Lusk.....	413
Injuries to the fetus in breech deliveries. Ruge.....	145
Insanities in females, suggestions with regard to. Pallen.....	206, 284
Intussusception in a child nine months old. Gillette.....	101

J.

Jacobi, A. Nursing bottle for babies too weak to nurse.....	274
“ The influence of menstruation, pregnancy, and medicines on lactation.....	353
“ Case of a boy with partial absence of right parietal bone....	643
Janvrin, Joseph E. Puerperal phlebitis.....	93
Jenks, E. W. Report of a successful case of Cesarean section after seven days' labor. Comments on the operation.....	606

L.

Labor, effects of prolonged, upon the life of the child. Thomas, C. H....	483
Lactation, influence of menstruation, pregnancy, and medicines on. Jacobi.....	353
Lamadrid, J. J. A case illustrating the influence on the infant of medi- cines, particularly narcotics administered to the mother during pregnancy and labor.....	466
Lente, Fred. D. Operation for atresia vagina.....	85
Ludlow, J. L. Sodium chlorate.....	477
Lusk, W. T. Necessity for caution in the use of chloroform in labor....	538
“ Morphia in child-birth.....	413
Lying-in women, treatment of. T. W. Hine.....	142
Lymph-channels, congenital occlusion and dilatation of. S. C. Busey, 1, 223,	420

M.

	PAGE
Mackenzie, Colin. A case of hydrorrhea.....	90
“ “ A case of puerperal septic pyemia—metastatic panophthal- themia.....	668
Mann. Uterus bicornis with partial vaginal septum.....	666, 667
Mattison, J. B. Eclampsia in the mother treated by hypodermic injection of morphia with asphyxia and subsequent convulsions in the child.....	299
McMechan, J. C. Delivery by external pressure.....	490
Medical gynecology. Barker.....	540
Menstruation, pregnancy, and medicines, influence of on lactation. Jacobi.	353
Metritis, recurrent, followed by neuralgia, treated successfully by salicylic acid. Noeggerath.....	672
Metrorrhagia, intermittent, during gestation. Skene.....	102
Milk fever. Howe.....	142
Morphia in child-birth. W. T. Lusk.....	413
“ effects of, on the new-born infant, when administered to the mother in labor. W. R. Gillette.....	612
Morris, J. Cheston. Case of rupture of the perineum, with laceration of the vestibule anterior to the urethra.....	312
Mucous membrane of the uterus, researches on the. Engelmann.....	537
Mundé, Paul F. Case of cyst of the vagina.....	673
“ “ Case of twins, both children decomposed—retention of the second child and both placenta for two days after the birth of the first child.....	103
“ Barker, Peaslee, Chamberlain, Thomas, Gillette, and others on the influence on the fetus of medicines, particularly narcotics, administered to the mother during pregnancy and labor.....	300
Myxoma of the mamma. Peaslee.....	673

N.

Nebinger, A.	Rupture of ovarian cyst.....	488, 448
New operation for removal of the uterus through the vagina with its peritoneal envelope for carcinoma.	Noeggerath.....	105
Nicoll, Henry D.	Case of death from rupture of the fallopian tube and intraperitoneal hemorrhage.....	111
“ “	Case of incision of the cervix—death on the fifteenth day.....	264
Noeggerath, E.	New operation for removal of uterus through the vagina, with its peritoneal covering for carcinoma.....	105
“	Specimen of uterus with appendages and kidneys from a woman dead of cancer, after amputation of the cervix by galvano-cautery seven months previously.....	266
Notes on a specimen of recently delivered uterus with adherent placenta.	J. R. Chadwick.....	448
Nursing sore-mouth.....		668
Nursing-bottle for infants too weak to nurse.	Jacobi.....	274

O.

Obituary of Gustav Simon.....	80
Obstetric forceps—short and long handles. Stuart.....	650
Opium and morphia during pregnancy and parturition. E. L. Partridge.....	558
“ “ “ “ Gillette.....	612
Ovarian cyst treated by electrolysis. R. Hesse.....	78
“ “ rupture of. Nebinger, A.....	488
Ovariectomy, thermoscope after. Perry.....	87
“ tetanus after. Parvin.....	716
“ vaginal. Goodell.....	708

	PAGE
Ovariectomy, fatal, apparently consequent upon the sudden escape of a small amount of blood into the peritoneal cavity. Thomas.	260
Orum, habitual death of.....	134
“ how long retained when dead.....	134

P.

Parametric inflammation.....	154
Packard, J. H. Placenta previa.....	472
“ “ Rupture of the womb.....	478
Pallen, Montrose A. Some suggestions in regard to the insanities of women.....	206, 284
“ “ Résumé on incision and division of the cervix uteri for dysmenorrhea and sterility.....	364
Palmer, C. D. Fibroid tumors complicated with tetanus.....	686
Parrish, Wm. H. Death of fetus by fright of the mother.....	340
“ “ Puerperal septicemic pyemia.....	340
“ “ Death from rupture of a cyst of the broad ligament..	484
“ “ Treatment of supravaginal elongation of the cervix..	489
Partridge. Use of opium and morphia during pregnancy and parturition.	558
Parvin. Tetanus after ovariectomy.....	716
Parturition in the negro race, apparent peculiarities of. Johnson.....	140
“ an acceleration of. Stafford.....	142
Peaslee. Specimen of coagulated mucus passed in a case of chronic endocolitis.....	662
“ Myxoma of the mamma.....	673
Pediculated pudendal tumor. Thomas.....	642
Pelvi-peritonitis simulating cancer. Walker.....	663
Perry. Thermoscope after ovariectomy.....	87
Placenta previa, treatment of. Thomas.....	145
“ treated by premature delivery, case of. Thomas.....	652
“ J. H. Packard.....	472
“ hemorrhage from. Cleemann.....	483
Pneumatic pressure and the genu-pectoral position in the reduction of uterine luxations. A. Sibley Campbell.....	62
Post-mortem hemorrhage arrested with tincture of iodine. Coleman.....	631
Pregnancy extra-uterine.....	133
“ “ operation for. Thomas.....	133
Prolapse of the funis. Brunton.....	143
Pseudo-ovarian cyst, case of. W. R. Gillette.....	87
Puerperal and non-puerperal eclampsia. B. B. Browne.....	38
“ phlebitis. Janvrin.....	93
“ convulsions. Taylor.....	125
“ eclampsia. Duncan.....	153
“ fever.....	154, 155
“ septicemic pyemia. Parish.....	340
“ “ “ MacKenzie.....	668

R.

Reamy, Thad. A. Impacted face-presentation.....	514
Rectocele and cystocele, a new operation for. Gillette.....	288
Reed, W. T. Simultaneous entrance of both heads of twins into the pelvis.....	634
Reimann. Simultaneous entrance of both twin heads into the pelvis....	47
Relation of the urinary organs to puerperal diseases. Chamberlain.....	177
Report on obstetrics for 1875-6. Mann.....	130
Résumé on incision and division of the cervix uteri in dysmenorrhea and sterility. Pallen.....	364
Resuscitation of the new-born infant by faradization. Thomas.....	291

	PAGE
Retention of placenta in labor at term. Trush.....	389, 506
Retroversion of the gravid uterus. Gervis.....	136
“ of the uterus complicated by adhesions and prolapse of the left ovary. Cleveland.....	107
“ and impaction of the gravid uterus complicated with cancer, the pregnancy continuing to term. Funderberg.....	462
Reviews:	
A Treatise on the Science and Practice of Midwifery. By W. S. Playfair, M.D., F.R.C.P., etc	159
A Manual of Midwifery. By Alfred Meadows, M.D. Lond. F.R.C.P., etc. Second Amer. from third Lond. ed.	176
Transactions of the American Gynecological Society for the year 1876.....	542
Rigidity of the os uteri. Carrick.....	678
Rupture of the perineum.....	143
“ “ uterus, fatal case of. Hanks.....	271
“ “ vagina, fatal case of, from loss of blood.....	272
“ “ vestibule during labor. Gillette.....	286
“ “ “ anterior to urethra and of perineum. Morris..	342
“ “ uterus by a Molesworth's dilator. Smith.....	346
“ “ womb. Packard.....	478
“ “ uterus (supposed) with fatal hemorrhage. Thomas....	668
S.	
Sarcoma of vaginal origin, case of retro-uterine. J. S. Green.....	281
“ the ovaries. Atlee.....	718
Savery, W. Abortion consequent on fatty degeneration of the placenta.	335
Serrated scoop for sessile fibroids. Thomas.....	645
Sex in utero, prediction of.....	131
Simultaneous entrance of both heads of twins into the pelvis. Reimann.	47
“ “ “ “ “ Churchill.	446
“ “ “ “ “ Reed	634
Sinkler Wharton. New galvano-cautery battery.....	477
Skene, Alex. J. C. Exfoliation of uterine mucous membrane from inter- rupted gestation.....	84
“ Case of intermittent metrorrhagia during gestation..	102
“ A second successful case of gastro-elytrotomy.....	623
“ Convulsions in children born of uremic mothers....	653
Smith, A. H. Rupture of a uterus by a Molesworth's dilator.....	346
“ Transfusion successfully performed on a child.....	349
Smythe, A. G. The position of the hymen in the negro race.....	638
Sodium chlorate. Ludlow.....	477
Sphincter ani, function of the third, so called. Chadwick.....	520
Spray-producing apparatus for antiseptic use during operations. Hanks.	277
Sterility. William Goodell ..	121
“ and dysmenorrhea, incision and division of the cervix uteri for. Pallen	364
Stomatitis materna. C. A. Wright.....	511
Strangulation of small intestines in recto-uterine adhesions, case of. Green	99
Stuart. Obstetric forceps with short and long handles	650
Subsulphate of iron as an antiseptic in pelvic surgery. Wilson.....	715
Suppuration of the vulvo-vaginal gland. Hunter.....	665
Sussdorff. A contribution to the differential diagnosis between hollow uterine polypus and complete inversion of the uterus.....	542
Symphiseotomy in contracted pelvis.....	150

T

Tetanus, intermittent or tetanic. Green.....	115
“ after ovariectomy. Parvin.....	716

	PAGE
Thomas, T. G. Fatal ovariectomy apparently from sudden escape of a small amount of blood into the peritoneal cavity.....	260
“ “ Fibrous polypus simulating inversion.....	266
“ “ Resuscitation of a new-born infant by faradization.....	291
“ “ Belladonna-poisoning from application of the extract to the os uteri.....	298
“ “ Treatment of placenta previa.....	145
“ “ “ “ by premature delivery....	652
“ “ Case of supposed rupture of uterus, with fatal hemorrhage.....	668
“ “ Pediculated pudendal tumor.....	642
“ “ Serrated scoop for sessile fibroids.....	645
Thomas, C. H. Effects of prolonged labor on the life of the child.....	483
Tracheotomy instruments, improved. H. T. Hanks.....	92
Transfusion successfully performed on a child. A. H. Smith.....	348
Transverse septum of the vagina obstructing delivery. Coleman.....	459
Treatment of solid uterine fibroids by electrolysis. Kimball, Cutter, Thomas.....	117
Trenholme, E. H. A case of extirpation of the uterus, together with the appendages for a fibroid tumor.....	452
Trush, J. Retention of placenta in labor at term, case, remarks....	389, 506
Turning in pelves narrowed in the conjugate diameter... ..	146
Turnipseed, E. B. Some facts in regard to the anatomical differences between the negro and white races.....	32
Twins, case of, both children decomposed; retention of second child and both placentæ for two days, etc. Mundé.....	103
U.	
Urinary organs to puerperal diseases, relation of the. Chamberlain....	177
Uterus, rupture of the. J. A. Thompson.....	144
“ bicornis, with partial vaginal septum. Mann.....	666, 667
V.	
Vagina, case of double, with single uterus. Watts.....	279
Vaginal ovariectomy. Goodell.....	708
Version, extra-abdominal. Ellinger.....	218
Vestibule, rupture of, during labor, case of.....	286
“ “ “ “ with rupture of the perineum.....	342
Vesico-urethro-vaginal fistula, complicated, cured. Emmet; Anway....	74
Vulvo-vaginal orifice, note on the anatomy of. H. Otis Hyatt.....	253, 635
W.	
Walker, Henry F. Placenta with history of concealed hemorrhage....	644
“ “ Pelvi-peritonitis simulating cancer.....	663
“ “ Small copper cent swallowed by a child of three years, and retained more than a month in the intestinal canal.....	275
Ward Chas. S. Case of dystocia caused by extreme anteversion and pendulous abdomen.....	101
Warker Ely Van De. The intra-uterine treatment of flexions.....	694
Warren John S. Dyspareunia.....	34, 89
Watts, Robert. Case of double vagina with single uterus.....	279
Amenorrhea from sloughing away of the uterine mucous membrane.....	665
Wilson, H. P. C. Subsulphate of iron as an antiseptic in uterine surgery	715
Wright, C. O. Stomatitis materna.....	511

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ORIGINAL COMMUNICATIONS.

CONGENITAL OCCLUSION AND DILATATION OF LYMPH
CHANNELS.¹

BY

SAMUEL C. BUSEY, M.D., WASHINGTON, D. C.,

Prof. of the Theory and Practice of Medicine, Medical Department of the University of George-
town; one of the Physicians to the Children's Hospital; Physician to the Louise
Home; Member of the Advisory and Consulting Board of Physicians
and Surgeons of the Columbia Hospital for Women and
Lying-in Asylum, etc.

(With numerous woodcuts.)

INTRODUCTION.

THE selection of a title which would convey succinctly and completely the purport of this essay has been attended with serious perplexities. Brevity, always desirable, could not be secured in any single technical word. Lymphangiectasis,² employed by Thilesen in 1856, by Petters in 1866, and by Weber in 1872, sufficiently indicates the characteristic morbid condition of their respective cases; but I propose to consider the phenomena of occlusion as well as of dilatation of lymph channels.

¹ A paper entitled "Occlusion and Dilatation of Lymph Channels," which relates to the *acquired* forms of the affection, will appear in the New Orleans Journal of Medicine.

² Dilatation of lymphatic vessels.

When the case numbered one first came under my observation, on the 8th of July, 1874, it was so novel and anomalous to me, that I neither knew by what nosological term to designate it, nor did I appreciate the significance of the associated morbid phenomena. The venous teleangiectasis,¹ and the hypertrophy of the soft and bony tissues were, apparently, obvious enough; but not until it was suggested by Dr. J. S. Billings,² did it occur to me that the vesicles were, probably, the dilated extremities of lymph channels. Subsequently, with the assistance of Dr. J. J. Woodward, so kindly proffered, and after a somewhat extended research in the library of the Surgeon-General's office, I concluded that the case belonged to some one of the forms of congenital elephantiasis; but the manifest and paramount involvement of the lymphatics, together with the further fact that elephantiasis was not a uniform characteristic of lymphatic teleangiectasis, and, like others of the associated phenomena, might be either congenital or acquired, excluded the case from the category of elephantiasis proper; and believing then, as subsequent investigation has demonstrated, that the essential features of the morbid conditions consisted in the occlusion and dilatation of lymph channels, I could not accept the elephantiasis development as the primary and predominating condition.

Desjardins³ claims, though I think Demarquay is entitled to the honor of first having applied the word lymphorrhagia, signifying "a discharge of lymph from a lymphatic vessel, owing to a lesion of its coats;" but it, like the word lymphorrhœa, signifying "the escape of lymphatic fluid by spontaneous rupture or accidental wound, producing a fistulous opening of the

¹ Dunglison, "Dilatation of far or capillary vessels;" Hebra, "A tumor consisting of dilated and newly formed capillaries and finest divisions of cutaneous vessels, and arising in the course of extra-uterine life;" Rokitsky, "A network of enlarged capillary vessels, embedded in a delicate and partly undeveloped cellular tissue, usually congenital, but may be acquired."

² It affords me pleasure to acknowledge the many favors and courtesies extended to me by Dr. Billings and his assistants. Without their aid, which has always been cheerfully rendered, I could not have collected the material necessary for this paper. I am also greatly indebted to Drs. William Lee, Drinkard, Kleinschmidt and Murphy for their assistance in translating the original reports of many of the cases.

³ Demarquay's case was published in 1853, Desjardins' in 1854.

lymphatic vessels," is only applicable to an occasional phenomenon.

Lymphorrhagia has been generally employed to designate those cases in which lymph escaped through a wound, either accidentally or intentionally made, and, hence, may or may not be associated with either dilatation or occlusion of lymph channels. Lymphorrhœa has been usually used to indicate the transudation of fluid through the walls of dilated and distended lymph vessels, and whether it indicates either the escape by transudation,¹ or by spontaneous rupture, it is associated necessarily with either stegnosis or distention, and perhaps with both conditions of lymph channels. In its broadest signification it simply implies the spontaneous flow or escape of lymph, a phenomenon but rarely associated with dilatation and distention of lymph channels.

Angiomata² includes "those pathological alterations of the skin which consist either wholly, or in great part, of permanently enlarged and newly formed vessels," and may be "divided into those which contain blood-vessels and those which contain lymphatics;" hence lymph-angiomata would concisely indicate such alterations involving the lymph vessels of the skin—a district, in one sense, too limited for our present purposes, and, in another, inviting us into the limitless field of investigation in regard to "newly formed vessels."

Elephantiasis may be either congenital or acquired, and may be associated with lymphangiectasis. Elephantiasis arabum, as defined and delineated by Hebra,³ presents in the varied aspects of its development, progress, and symptomatology, many features analogous to those presented by occasional cases of lymphatic teleangiectasis. It is essentially an hypertrophy of the fibrous tissue of the cutis and of the subcutaneous connective tissue, affecting primarily the latter, and followed in the progress of further development by an increase in volume of all locally implicated, adjacent organs and tissues, caused by local disturbance of the circulation and chronic recurrent inflammation of the vessels and lymphatics. Some have,

¹ Demarquay applied lymphorrhagia to an intermittent, and Zambaco the word lymphorrhœa to a continuous flow.

² Hebra, *Diseases of Skin*, vol. iii., p. 338.

³ *Loc. cit.*, p. 134.

indeed, maintained that it was a disease of the lymphatics. Whether viewed as a disease primarily involving the lymphatics, or implicating these vessels only in its development and progress, its objective features are so interwoven with lymph-stasis and lymphangiectasis that it is not always easy to determine whether the lymphatics or the connective tissue of the skin was primarily affected, and it is not improbable that occlusion and dilatation of lymph channels may eventuate in the development of elephantiasis arabum.

Virchow has applied the term elephantiasis teleangiectodes, and Hebra¹ the word lymphangiectodes, to a form of congenital hypertrophy, usually occurring in acephalus and other non-viable monsters, and, occasionally, in viable children, which consists in lobulated cutaneous tumors "confined to a few localities or to one region of the body," and involving principally the subcutaneous connective tissue and the blood-vessels of the corium, and which may remain without alteration in size or condition during life, or may become diffused and develop into a monstrous deformity, occasionally involving the whole or a greater part of the entire body. Notwithstanding the remarkable participation of the blood-vessels in the morbid process, which, if communicating freely and extending into the cutis, may result in the formation of vascular spongy tumors ("lobulated vascular fungus" of Schuh), or by free anastomosis, and amalgamation of the individual blood-vessels form blood cavities (the "cavernous blood tumors" of Rokitansky), the essential histological and clinical features of the affection classify it as a variety of elephantiasis arabum. In this, as in other forms, the connective tissue is primarily affected, and as the morbid growth may predominate in the blood-vessels or in the connective tissue, so will the hypertrophied mass partake of the nature of a true elephantiasis or of a "vascular spongy tumor," or "cavernous blood-tumor." In addition, the manifest evidence of the implication of the lymphatic apparatus is found in the "slits, gaps (Kaposi) cystoid spaces—dilated lymph spaces" observed in the masses of connective tissue; but this pathological condition is not the predominant or characteristic feature, and this circumstance, together with the fact that the manner of formation of the blood cavities or blood

¹ Hebra, loc. cit., p. 159, vol. iii.

spongy tumors is yet in controversy—one view maintaining that they are new growths, and the other that they are the result of morbid changes taking place in existing vessels or structures,—necessarily renders the term inapplicable to the purpose in view, and would extend the limits of the inquiry beyond the prescribed boundaries.

Rejecting, then, these several appellations as inapplicable, for the reasons set forth, and as inadequately expressing the precise purport of this memoir, I have adopted the one upon the title-page, which, I think, conveys to the mind distinct pathological conditions of the lymph channels, and is sufficiently comprehensive to include all that is essential to the study of the nature, etiology, and treatment of those conditions.

While the purpose has been to limit the investigation to distinctly defined conditions of the lymphatic apparatus, the relation existing between elephantiac development and occlusion and dilatation of lymph channels is so intimate, that it is impossible to draw a line so definite and distinctive as to exclude from consideration certain cases and varieties of elephantiasis; and if such a separation were possible, it would necessarily impair the opportunities for study and the value of the deductions.

Elephantiasis arabum is divided by Kaposi into two forms—Elephantiasis arabum cruris and elephantiasis of the genitals, which are markedly distinct from one another. Further division is made by Virchow, into elephantiasis dura, in which the whole mass of the soft tissues of the affected part seems to be converted into connective tissue, which is not only increased, “but is made up of stiff, glistening, white fibres, and is very firm, almost scirrhus;”¹ and elephantiasis mollis, which is characterized by a uniformly soft and gelatinous condition of the tissues. These latter forms Kaposi insists are not distinct diseases, but simply indicate different consistencies of the hypertrophied structures. E. A. C. is a local disease, affecting isolated portions of the body, more rarely symmetrical parts, usually confined to one or both legs, most frequently to the right. Its immediate cause is an inflammation of the derma, involving the blood-vessels and lymphatics or primarily the lymphatics, accompanied with effusion and resulting in hypertrophy,

¹ Hebra, loc. cit., p. 140.

primarily beginning in the subcutaneous connective tissue, which may extend to and involve all the constituent soft tissues of the affected part and the bony structures. The fluid effused is believed, by Tilbury Fox, to be lymph, and by Kaposi to be a fibrinogenous substance, possessing a quantity of formed elements like those of lymph. It coagulates on exposure to the air, and when first effused is slightly milky. Containing formed cells in great abundance, which are the most important material for the production of new connective tissue, it is readily understood why the hypertrophy commences in that tissue. The effusion is the result of the occlusion or obliteration of the lymphatics, consequent upon the inflammation; and though there is a contrariety of opinion in regard to the condition of the lymphatics, it is generally conceded that the lymphatic vessels and lymph spaces are dilated, and in them, lymph, rich in connective-tissue-forming elements, is stagnated. In the midst of the newly formed and dense connective tissue, cyst-like spaces filled with nutritive plasma, are not infrequently found, which are believed to be cystic dilatations of lymphatic vessels. Occasionally vesicles are formed upon the surface of the hypertrophied part, containing a clear or milky fluid, which, escaping by puncture or spontaneous rupture, coagulates on exposure to the air, and is believed to be lymph. The vesicles are the dilated extremities of lymph channels. The blood-vessels, especially the veins, are involved in the morbid process. They are more numerous and of larger calibre, with sometimes thickened and sometimes thinned walls, and occasionally the smaller become occluded with coagulated fibrin.

In elephantiasis of the genitals, erysipelatous and lymphangiotic attacks of inflammation have been very rarely observed, never in cases attacking the scrotum; yet the macroscopic and microscopic observations are analogous to those of E. A. C., and find their cause in long-continued stagnation of the lymph in the interstitial lymph spaces. It is only during the later stages that the hypertrophied and dilated lymphatics rupture and lymphorrhœa takes place, and, as in E. A. C., cyst-like lymph spaces are found.

It must therefore become manifest that, to completely grasp the issues involved, certain cases, though not presenting the uniform clinical and pathological characteristics of elephan-

tiasis arabum, are certainly well-defined instances of some form of the disease, and cannot be excluded from consideration in connection with an investigation into the causes and nature of occlusion and dilatation of lymph channels. To these have been added a number of cases of congenital giant growth, with the view to more clearly illustrate some of the anomalous features presented by some of the cases, and to complete the opportunities for the study of the subject.

CONGENITAL OCCLUSION AND DILATATION OF LYMPH CHANNELS.

These abnormalities present themselves in various forms, and in association with very varied conditions of tissue development; usually they are complicated with some one of the many varieties of so-called congenital elephantiasis, which may be either a concurrent or consecutive phenomenon.

Congenital elephantiasis may involve an entire extremity, or may show itself at many places (Virchow) of the surface of the body, either in the form of regular enlargements, involving a portion of an extremity or of the trunk, or in the form of tumors, either solid or cystic, "rising in larger or smaller masses upon the surface of the skin."

Elephantiasis arabum is a condition which regularly commences with inflammatory processes, similar in character to erysipelas, in which the lymph vessels participate, and consists in the development of connective-tissue masses, which originate in the interior of the affected parts, and proceeds from a hyperplasia of pre-existing connective tissue. The condition of the newly-formed connective tissue varies, and Virchow distinguishes, according to its greater or lesser density, elephantiasis dura and elephantiasis mollis.

For the most part the congenital forms belong to the variety of elephantiasis mollis, which, when carried "into after-life, is always partial, and does not present that lardaceous, tendinous hardness"—sclerosis, which belongs to the acquired forms. In such cases the principal seat of the change is usually in the subcutaneous tissue, and the result varies according as the morbid alteration begins sooner or later in the intra-uterine life. If the fat-tissue (Virchow) has already been developed, the appearance is not unlike a polysarcia; if the change begins when the mucous tissue still lies under the skin, then a more or less

loose, soft, sometimes gelatinous, tissue continues to exist.¹ There are also other peculiarities which belong to the congenital forms of elephantiasis mollis. The parts imbedded in the connective tissue undergo hyperplastic development, and the morbid process may involve the vessels, nerves, muscles, and even extend to the bones. The blood-vessels, most usually the veins, and the lymphatic vessels, may reach a colossal development, the enlargement taking place both in length and breadth, forming, occasionally, a varicose network, or a rosary-like dilatation, or presenting a cavernous condition.

Not infrequently, in the congenital forms, the tumors, nodes, and enlargements present a cystic formation, which Virchow and Billroth² maintain proceeds from dilated lymph channels, though it is not always easy to trace a direct connection. These cysts or caverns contain a lymphoid fluid which, microscopically and chemically, so closely resembles lymph, in all its essential characteristics, as hardly to admit of any doubt of their origin in dilated lymph vessels or spaces.

The purpose here is to group together all such cases of congenital elephantiac development, co-existing with cystic or cavernous formation, and such other congenital cases as more distinctly exhibit, primarily, abnormalities of lymphatic vessels, with the view of studying the condition of the lymphatic channels and the relation which such alterations bear to the associated tissue changes.

CASE I.—On the 8th of July, 1874, I was called to see an infant, four days old, presenting a form of congenital disease, as hereafter described.

O. K., the father, aged 37, a strong, healthy, but not a robust man, of sallow complexion, had enjoyed excellent health all his life, excepting an occasional attack of intermittent fever, and a single attack of gonorrhœa, five years previously.

The mother was 26 years old; always healthy, robust, short stature. Had borne four children, three by the present husband, one of which died at the age of six months of "summer diarrhœa." The three living children were aged, respectively, five years, two years and six months, and the infant, the subject of this report. The two older children were healthy, well grown, robust, and represented by their parents as having been healthy from birth. No traces of

¹ Virchow, *Onkologie*, vol. i., p. 316.

² *Beitrage zur Path. Hist.*, p. 215.

syphilis, either in the parents or children, could be discovered. Both parents white; the mother Irish and the father of German descent.

The infant was born at full term, after a brief labor, unattended by any unusual occurrence. The colored midwife, in attendance, informed me that the presentation was head, and the cord was not wrapped about the neck or lower extremities of the child.

At the time of my visit the mother was doing well, and had a remarkably favorable puerperium. She worked much during her pregnancy on a sewing machine, using the right foot on the pedal, to which circumstance she attributed the affliction of her infant; adding, as a confirmation of her theory, that during the latter months of her pregnancy her right leg (corresponding with the diseased member of the child) was much swollen, and about which appeared several purplish spots. At the time of my visit the swelling had disappeared, and the purplish spots were recognized as very slightly varicosed veins.

The infant, excepting the anomalous condition hereafter to be described, seemed well, slept well and quietly; nursed; bowels acted naturally; passed water as is usual. The cord separated on the fourth day, stump healthy; color of skin natural; tongue clean; cry not peculiar; pulse, counted during sleep, 120; respiration natural, quiet, and easy; inflation of lungs complete; temperature in rectum 98.4.

The comparative sizes of the sound and diseased leg are very distinctly brought out by inspection of figures 1 and 2. The following measurements were taken August 2, 1874:¹

Healthy leg at groin,	7½ inches;	at calf,	5 inches.
Unsound “ “	11½ “	“ “	7 “

No difference in length. The hypertrophy on the inside began at and involved the right pudendal labium, and extended throughout the leg, but proportionally less in the foot. The folds of the soft parts, with the flexures dipping deep towards the bones, with their surfaces closely coaptated, as if firmly pressed together, are well represented in Fig. 1. These folds, like the other portions of the soft parts, yield a firm, inelastic sensation, neither indurated nor œdematous. Firmer than normal flesh of so young an infant. The partial sclerosis is uniform, and invades all the constituent tissues of the soft parts. The covering integument of the folds, as it is of the entire limb, excepting as hereafter described, is in appearance normal. It cannot be pinched up, and is less movable than the natural skin over other parts. Does not pit on pressure; to a limited degree scleromatous, but not presenting the horny hardness, smooth, shining, yellowish or waxy hue, dense and parchment-like feel, and diminished temperature so characteristic of scleroderma. There is no dermatolytic growth. At the base of the third flexure—the only one below the knee—is seen a projecting body, which seems pendant from the apex of this flexure; but this is the vesicle represented at the

¹ Those taken July 8th lost, but believed not to differ materially.

base of the third flexure (see Figs. 1 and 3), as seen on the inside of the leg, and second as seen on the outside.

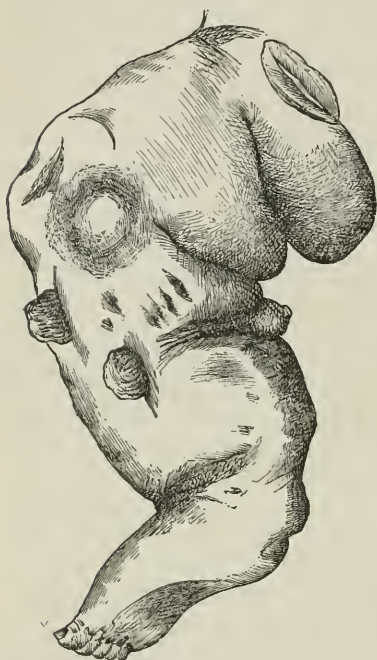


FIG. 1.—Represents the inner aspect of the right leg.



FIG. 2.—Represents the left or sound limb.

The external edges of this flexure (second on outer aspect, see Fig. 3) are separated by the thin bevelled edge of a fleshy fold, which gives it the appearance as if two flexures (the middle and third on the inside) had terminated in one on the outside.

Immediately anterior to the third flexure (Fig. 1), near its apex, and midway between this point and the anterior margin of the tibia, is situated a nipple-shaped tumor, and farther toward the same anterior margin, and approaching nearer the knee-joint, another is located, similarly shapen, but less globular, with several depressions near its apex, at the bottom of each of which is a minute bluish-colored spot. Both these tumors are covered with the epidermis and cutis vera, are of a pale bluish-white color—the blue tinge deepening at several points, thus presenting indistinctly the appearance of a superficial vein. These bodies are near the size of a female nipple; contain fluid, which can be pressed from them, but they refill immediately upon the withdrawal of the pressure. Farther up the limb, on the inner aspect of the knee, between the patella and the apex of the

middle flexure, is located a subcutaneous cyst¹ (see Fig. 1), measuring one inch in diameter at base, and three-fourths of an inch from apex to base, movable to a limited extent, and covered by normal skin, which slips easily over and about it. It cannot be diminished by pressure. The small dark spots between the middle and third flexures and the nipple-shaped bodies, those below the third flexure, and the one below the tarsal flexure, are, in the living subject, bluish-colored puncta, like venous blood seen through a thin and anæmic integument.



FIG. 3.—Represents the outer aspect of the diseased leg.

The tibia appears very much enlarged and illy-shapen; the femur seems natural in size. All the joints are normal, though the ankle, in consequence of the hypertrophy of the surrounding soft tissues, and, in a measure, due also to the enlargement of the tibia, presents an awkward appearance, looking as if the bones of the leg were dislocated backward from the tarsal articulation; but a careful examination of the joint failed to discover any abnormal condition or location of its articulating surfaces. The motions of the limb are perfect; the child moves both limbs alike, and does not manifest pain from manipulation.

On the outer side (Fig. 3) the hypertrophy commences at the small of the back, extending downward, but not crossing the spinal column, and involves the entire right buttock and right side of the leg. In this figure the anterior margin of the limb, and the awkward appearance of the ankle, are accurately drawn. The spot just above the apex of the second flexure is a superficial nævus; another, larger, is located higher up on the right buttock; a third, still larger, is situated just below the second flexure on the calf, and a fourth on the antero-lateral aspect of the ankle. The ends of the third and fourth toes are purple colored.

The middle fold presents a broader apex surface, and the third is

¹ At my visit, August 2d, accompanied by Dr. J. J. Woodward, neither of us could discover any trace of this cyst-like body.

absent from this view. The flexure below the knee does not appear on the outside as a distinct one.

Below the middle flexure (second, as seen in Fig. 3), on the outer and posterior surfaces of the right calf, is a cluster of vesicles—bladder-like, varying in size. (Fig. 4.) The largest is not greater than the end of the little finger. One is located in the centre of the *nævus*, and others around its border. All these vesicles are covered with epidermis distinctly marked with minute ramifying venous radicles. These vesicles, including the one rising through the centre of the *nævus*, are semi-

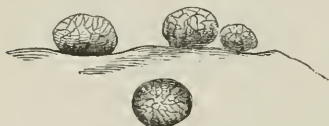


Fig. 4.

translucent; contain a serous colored fluid; can be inverted by very gentle pressure; communicate one with another and apparently with a subcutaneous cavern. When any one of them is emptied and its investing epidermis is inverted, by pressure, one or more of the remaining filled vesicles become fuller and tense with the accumulated fluid. Upon removal of the pressure the emptied and inverted vesicle refills and gradually returns to its previous condition and form. When inverted the sensation of a circular firm rim, with a well-defined sharp edge, is communicated to the touch. No communication exists between these vesicles and the nipple-shaped tumors on the inside of the leg. The fluid in the vesicles is serous. About this group of vesicles, especially along the margin of the inlying *nævus*, are a number of very small purplish puncta, and many cicatricial-looking spots, which the attending midwife alleges were vesicles, like those above described, but now emptied and contracted. She claims to have counted forty vesicles immediately after birth; but both statements are discredited. Above this group of vesicles, nearly midway between them and the outer margin of the patella, a large vein, represented by the dark wavy line in the cut, approaches the surface. To the touch it feels like a groove, with distinct and firm edges. No communication can be made out between it and the nipple-shaped bodies.

Nov. 4th, 1874.—The child has continued to enjoy, uninterruptedly, good health; has not been sick a day since its birth. To-day, four months old, it weighs seventeen pounds; is bright, playful, and hearty.

The measurements of the limbs are as follows:

	<i>Right.</i>	<i>Left.</i>
Around calf,	9½ inches.	6¾ inches.
Thigh, upper fold,	14 “	10 “
Ankle,	7¾ “	4½ “
Right leg one-half inch longer than the left.		
April 4th, 1875.	<i>Right.</i>	<i>Left.</i>
Around calf,	11 inches.	6¼ inches.
Thigh, upper fold,	16 “	11½ “
Ankle,	9 “	4½ “

April 4th, 1875.—Right leg one inch longer than left; right foot one-half inch longer than left; two teeth. Healthy, thin. Hypertrophied parts, soft, flabby; integument less firm. Mother menstruating regularly since November. Child passes an unusual quantity of urine.

In the foregoing description I have endeavored to correctly represent the coexisting morbid phenomena presented by this somewhat remarkable case, as they were observed during the lifetime of the unfortunate child. The subsequent details of the post-mortem examination will not verify these observations in every particular.

During the winter of 1874-75 the child suffered severely from a protracted attack of whooping-cough, which only entirely disappeared during the milder spring weather, leaving no other effect than loss of strength and some emaciation. During the ensuing months of May and June she suffered from several attacks of catarrhal diarrhœa, followed by increased debility and emaciation. These diarrhœal attacks were always accompanied with marked diminution of the size of the diseased limb; the buttock and lobular masses became much softened, and the thickened integuments flabby. In the early part of July, after having been improperly fed upon blackberries, she was seized again with diarrhœa, more severe than any preceding attack, which resisted treatment, increased in intensity, and soon eventuated in enterocolitis, marked by stools varying in frequency and consistency, more or less mixed with blood, straining, abdominal tenderness, fever, and prolapsus ani. Occasionally the dejections were exclusively blood, never exceeding in quantity a drachm, though during several days this quantity was evacuated several times.¹ Her appetite continued moderately good. With intervals of apparent improvement, succeeded by more aggravated symptoms, she continued to suffer, losing strength and emaciating rapidly until August 12th, when she sank into collapse and died, aged one year, one month, and eight days.

*Autopsy forty-eight hours after death.*² Body very much emaciated, no cadaveric rigidity. Eight incisor teeth, anterior fontanelle very large.

<i>Measurements.</i>	<i>Right Leg.</i>	<i>Left Leg.</i>
From anterior superior process of ilium to middle of patella, . . }	7 inches	6 $\frac{3}{4}$ inches.
From middle of patella to internal malleolus, }	6 "	5 $\frac{5}{8}$ "
" to external malleolus of right leg,	6 $\frac{1}{2}$ "	

<i>Circumferences.</i>		
Middle of thigh,	7 "	5 $\frac{3}{4}$ "
Buttocks,	12 $\frac{1}{2}$ "	7 $\frac{3}{4}$ "
Knee,	8 "	6 "

¹ I suspected, from the repetition of this hemorrhage, some abnormal condition or arrangement of the pelvic blood-vessels, but none was discovered.

² Present, Drs. Drinkard, Lamb, Healey, and Kleinschmidt.

	<i>Circumferences.</i>	<i>Right Leg.</i>	<i>Left Leg.</i>
Calf,		8 inches.	4½ inches.
Malleoli,		5½ "	4 "
Tarsus,		4½ "	4 "
Length of foot,		3½ "	4 "
Length of cadaver from occiput to the plantar surface of heel, . . }		31¼ "	30 "

The following cut (Fig. 5) is from a photograph of the dismembered limb, and exhibits the relative shrinkage of the hypertrophied parts.



FIG. 5.

The covering integument of the buttock hung in large flabby folds, which could be raised and moved as if unattached to the subjacent tissues. Beneath were several empty caverns, varying in size, and lined by an irregular jagged surface, seemingly made up of very small fat globules, thickly interspersed with minute cysts, mostly not larger than a pin's head.

Several times during the progress of the intestinal disease, and once previously, following what she considered a very copious diuresis, the mother called my attention to the apparent diminution of the rump and to the looseness of the skin, which led me to suspect the existence of lymph caverns. The sensation in several places was different from that of a solid mass, but at no time could I detect fluctuation or cause diminution by firm and continuous pressure.

The measurements last given were made from the limb as shown in Fig. 5.

Heart, lungs, liver, kidneys, and spleen healthy; stomach filled with a whitish gruel-like fluid; mesenteric glands enlarged; blood-vessels of mesentery engorged. Peyer's patches were enlarged; follicles distinct and prominent. In the large intestines, the glands were ulcerated, intestinal walls large and translucent.

On the right side, extending from the fourth lumbar vertebra (displacing the right kidney, pushing its convex outer surface up against the liver, into the under surface of which the kidney has made a marked depression) was found an extra-peritoneal tumor, which filled two-thirds of the false and true pelvis. This mass appeared like a number of the convolutions of the large intestine agglutinated together and in a gangrenous condition. It was firmly attached to the bodies of the lumbar vertebrae, fascia of right psoas muscle, along the crest of right ilium and right horizontal ramus of the pubis, to the fascia of the false and true pelvis and to the perineum. The cæcum

was displaced to the left side, and the rectum pushed far to the left of the median line. Uterus and bladder normal, and in natural position. Right ovary lying upon the anterior surface of tumor, attached to it (but not fixed) by the broad ligament, between the layers of which the tumor seemed to be.

This tumor, as imperfectly shown in Fig. 6, consisted of five cysts, each containing a thick brownish-red fluid, composed of blood corpuscles, granular matter, and débris. Three of the cysts communicated through apertures in the intervening septa, the other two were completely closed. The communicating cysts were emptied of their contents and filled with quicksilver, and the non-communicating were treated in a similar manner, without discovering any connection with the adjacent parts. The blood-vessels in the neighborhood of these cysts were tied above and below and injected with quicksilver, but no communication could be discovered between the cysts and any of the vessels. Their walls and the intervening septa were composed of dense fibrous tissue, and the anterior surface of the mass was covered by the peritoneum. None of the cysts were separate and distinct, but so arranged that a portion of the membranous wall of each was common to two or more cysts. These cysts are believed to be devastated lymphatic glands.

The skin covering the hypertrophied parts was everywhere thickened. The subcutaneous connective tissue was vastly increased, contained but little fat, was wide meshed, with very many small cysts, some as large as a pea, filled with a serous fluid. Between the skin and superficial fascia, in several places, were smaller or larger cavities, containing clusters of small serous-like cysts, in every respect like those found in the meshes of the subcutaneous areolar tissue. One of these cavities, about the size of a filbert, was found in the locality of the cyst-like body on the inner aspect of the knee-joint; upon the fascia forming its base was a thick layer of dark pigment.

The muscles of the thigh and buttock were pale and flabby, and everywhere in the inter-muscular connective tissue, varying in size from a pin's head to a pea, were to be found the serous cysts. The muscles of the leg were of a deeper color and appeared normal. They were not atrophied. The arteries and nerves were natural. The veins on the outer and posterior aspects were hypertrophied—the



FIG. 6.

external saphena, before referred to as the dark-bluish wavy line on the outer side of the knee, was very large. From it a large branch ran to the large nævus about the cluster of vesicles, and there subdivided into a number of minute branches. The posterior tibial was as large as a goose-quill, and, in the immediate vicinity of the nævus at the ankle-joint, divided into a number of smaller branches. From it extended a branch as large as a crow's quill along the dorsum of the foot, sending large branches to the third and fourth toes, which were discolored.

The vesicles contained a serous-like fluid. From one the pouch-like covering was removed, and in the base two small openings could be seen with the naked eye, through which a lymph-like fluid could be pressed. One of the vesicles was incised, and into it a small funnel was inserted and secured, into which quicksilver was poured. All of the vesicles, with a single exception, quickly filled with the metal, and a number of the cicatricial spots developed into vesicles filled with the metal. From the same reservoir of metal the lymphatic vessels were injected; one dipping down between the muscles terminated in a dilated pouch-like sinus, another followed the course of the posterior tibial vein, sending off numerous branches along its course; and a third, probably the same trunk, ran upwards, but could not be traced far above the knee in consequence of the previous dissection of the parts above. No communication between the superficial and deep-seated lymphatics could be anywhere discovered—none of the latter being injected with the metal.

After the most careful examination we failed to discover either the receptaculum chyli or the left thoracic duct.¹ Portions of the subclavian and jugular veins were removed and carefully examined subsequently, but no vascular connection could be recognized as the left thoracic duct. The right duct emptied into the right subclavian vein.

Beneath the nipple-shaped bodies, in the superficial fascia, was found a spongy vascular tissue, which extended into the bodies, seeming to compose the entire mass, except the covering integument. The bluish-colored puncta, before described, were the terminal dilated ends of venous radicles.

Figure 7 represents a vertical section of one of these bodies. Microscopic examination by Dr. McConnel. It shows a central sinus, which in the recent state contained blood, clots of which may be seen represented upon different parts of the wall. Surrounding this is well formed connective tissue, exhibiting no evidence of any inflammatory process; other views of the same section exhibited here and there small clots of blood completely walled in. Mucous tissue was also to be seen. The sub-papillary layer of the skin was exceedingly vascular, and the sweat glands were enormously hypertrophied.

¹ This dissection was made under unfavorable circumstances. The portion of the body represented in Figures 5 and 6 was removed and examined after several days' immersion in alcohol.



FIG. 7.

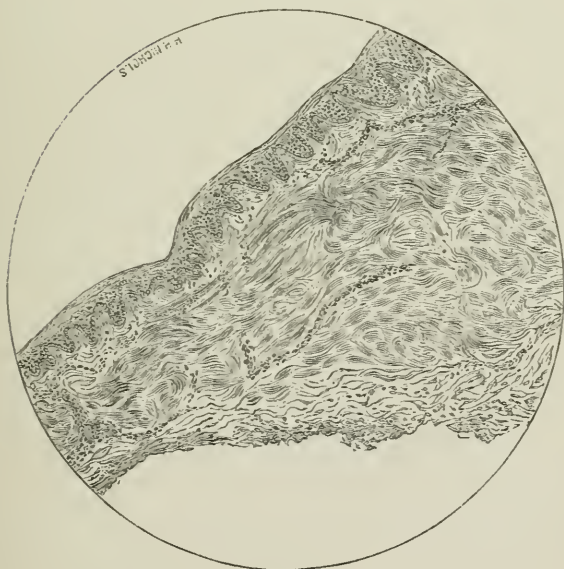


FIG. 8.

Figure 8 represents a microscopic section (vertical) of the integument covering one of the vesicles. These vesicles were simply pouches of skin containing lymph, their walls consisting of nothing (McConnel) but the components of the skin, with here and there newly formed connective tissue which encroached upon the cavity.

The tibia was very slightly, if any, enlarged. The articulating surfaces were normal.

The discrepancy in the measurements of the foot are due to the fact that in one instance the measurement is made from the posterior surface of the fat cushion on the plantar surface (see Fig. 3), and in the other instance from the posterior surface of the heel proper.

I have failed to find any record of a case precisely similar, in all of its features, to this anomalous one; but a number of cases have been published, both congenital and acquired, presenting one or more of its phenomena. By applying the information to be derived from an examination of the reported cases, a satisfactory explanation of all the abnormal conditions may be reached. This method of study will involve the grouping together of the cases illustrating particular phenomena, and though the special inquiry relates to congenital conditions, it will be necessary, occasionally, to amplify the illustration, to introduce into the group instances of the acquired forms.

The feature which first attracts attention is the extraordinary enlargement, and the singular preservation, in such a marked manner, of the natural flexures of the skin and subcutaneous adipose tissue. The natural furrows and indentations of the covering integument are usually exaggerated in similar hypertrophic developments; but this peculiar arrangement of the enlargement only finds its analogy in the case, reported¹ by Thomas Chevalier, of "extraordinary enlargement of the right lower extremity," following an attack of phlegmasia alba dolens.

CASE II.—Sarah Rogers, aged 46, had suffered with a continuous enlargement of the right leg, until finally it became so unwieldy as to prevent locomotion, yet the knee and ankle-joints retained as much flexibility as the enormous increase of substance surrounding them would admit; motion was painless. The cut (Fig. 9) exhibits on the outer aspect of the limb the lobules separated by the furrows.

Autopsy.—Hypertrophy confined to skin and fat tissue; muscles slender and pale; bones and joints unaffected; arteries not enlarged; no change in the inguinal or pelvic glands detected. The cutaneous

¹ Med. Chir. Trans. Lon., vol. ii., p. 63, 1817.

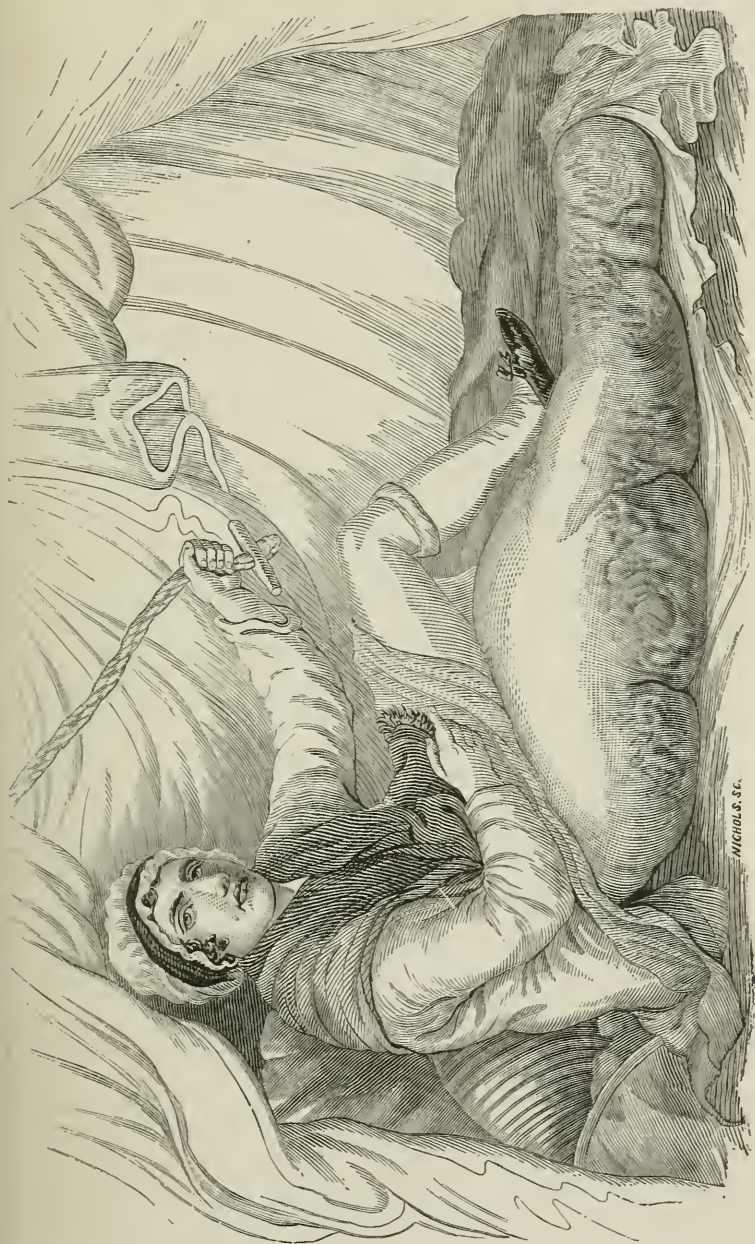


FIG. 9.

papillæ on the foot were enlarged and elongated into pendulous cones rounded at the end, each being supplied with an artery which terminated "in villi upon its surface."

The development involved the greater part of the thigh and the entire leg and foot. It followed an inflammatory process; was attended with a "copious and exhaustive transudation of serous fluid from the surface of the hypertrophied part," and it is probable that the fat masses were interspersed with minute inter-communicating cavities filled with similar fluid.

Somewhat similar, though less extensive, was the "enlargement of the left lower extremity," in the following case, Fig. 10.

CASE III.¹—A young man, aged 25. The limb measured below the knee two feet nine inches in circumference; had attained its size very slowly and gradually, unattended with any pain or inflammation of the skin, the subjacent adipose tissue, or of the inguinal glands.



Fig. 10.

The swelling involved the lower half of the thigh, leg, and foot; on the foot, as in Chevalier's case, it overhung the toes. Below the knee the enlargement was divided into lobes by deep fissures. On the thigh, above the swelling, the skin was loose and flabby; below it was thickened and scaly; in the fissures the cuticle was very thin and the skin was reddish and constantly moistened with fluid, great quantities of which were discharged. Both the knee and ankle-joints retained their flexibility. He could walk and run. Non-congenital.

CASE IV.²—A. C., æt. 52. In her sixth year suffered from ophthalmia, from twelfth to fourteenth year from spondilitis lumbalis, resulting in kyphosis of lumbar vertebra, unaccompanied by paralysis. In her nineteenth year the affection of the left leg began, with violent burning pains night and day, followed soon by the appearance on the skin of the foot and leg of closely arranged, translucent vesicles, not larger than filberts, and hemispherical, which disappeared without rupture, leaving white spots. From this time the leg began to enlarge, and from several cracks in the skin a large quantity of a clear serous fluid exuded. These openings closed in six weeks, and subsequently the integument of the leg was repeatedly attacked with an erysipelatous inflammation, attended with rigors and loss of appe-

¹ R. J. Graves, Dub. Hosp. Rep., vol. iv., p. 521, 1827.

² Kappeler, Chirurg. Beobacht. aus dem Kantonspital Münsterlingen, p. 260, 1865, 1870.

tite. After each of these attacks the leg became larger, nodular projecting tumors and deep transverse sulci formed. Later a large abscess formed on the anterior surface of the leg, which opened spontaneously and discharged a large amount of black, stinking blood and pus, and then the thigh began to enlarge. Four years after, at the time of the ligation of the femoral artery, the measurements of the circumferences were as follows, in centimetres :

	<i>Right.</i>	<i>Left.</i>	<i>After ligation.</i>
Foot at base of toes,	24	25	23
Middle of foot,	22½	30½	26
Around malleoli,	23½	32½	27½
Middle of leg,	31	45½	33
Knee,	33	47½	34
Middle of thigh,	47	54½	40

This reduction had been gained in six months, and remained the same four years afterward, in 1874.

CASE V.—J. P.,¹ æt. 28. With the exception of an attack of typhus fever in his twentieth year, had enjoyed good health until six months previous to admission to clinic, when he had accidentally cut the sole of his foot, which apparently healed without trouble, but was followed in two weeks by a painful abscess, and afterward by a fever which lasted several weeks. Then the leg began to swell, and numerous abscesses formed on the dorsum of the foot and leg, which healed slowly. Four years after, the affected parts had reached the enormous size shown in Fig. 11, and appeared like a truncated cone, composed of three tumors, the upper one resting upon a deep furrow encircling the ankle-joint, another surrounding the heel like a horse-shoe, and a third arching across the tarsus and extending to the toes. In the horizontal posture the tumors became softened and flaccid; when erect they became hard and tense. The inguinal glands were swelled and hard, and a systolic murmur could be heard in both extremities from the inguinal fold to the apex of the inguinal triangle.



FIG. 11.

Anatomical examination of the amputated limb.—The superficial and deep veins, which communicated by numerous branches, were dilated; the saphena by varices of walnut

¹ Prof. A. Bryk, in Cracow. Oester. Zeitschr. für pract. Heilkunde, vol. xv., No. xi., p. 325. For the opportunity of examining the reports of Prof. Bryk, I am indebted to Dr. Jacobi, of New York, who kindly placed at my disposal the number of the journal above referred to.

size, and, in the territory of the tumors, by larger sacs filled with dry plugs adherent to the walls. The walls of the larger veins were thickened, did not collapse on section. The nerves were thickened, the neurolemma injected.

The hyperplastic integument was thickened, covered with a bristly epidermis, and when incised discharged copiously a clear fluid, which, after standing loosely, coagulated. The upper tumor posteriorly was abundantly supplied with fat; anteriorly it was mostly composed, as were the other tumors, of a white tendinous callous tissue, which fused with a thickened and vascular periosteum. The tibia anteriorly was covered with osteophytes; its cavity was mostly ossified and filled with a reddish marrow. The hair follicles and sebaceous glands were atrophied; the latter everywhere were filled with cells undergoing fatty degeneration. The sudoriferous glands were in sparse groups and atrophied.

The single fat lobes of the calf-tumor were surrounded by a fibrous capsule, which sent processes between the smaller lobes and spread between the single fat cells in the form of a regular network of anastomosing nucleated spindle cells, in the meshes of which the fat cells could be recognized. With increasing density of the connective tissue the fat contents of the mesh-cavities decreased and the fat cells became smaller. All the transitions from the soft fat lobules to the sclerotic fibroma—only containing fibrous trabecular tissue, but always preserving the areolar character—could be traced.

The lymph vessels were very numerous, dilated, and formed nets with mesh spaces. The vascular periosteum was attached to the bone by an osteoid layer. The bone in places was hardened.



FIG. 12.

to the chin. At the edges of the scapulæ and on the neck and sinciput it could be raised from the subjacent tissues. By furrows it was divided

CASE VI.—A fœtus,¹ between the fourth and fifth month, weighing two hundred and fifty grammes, and measuring in length eighteen and one-fourth c.m., and around the thorax fourteen. The tumor, as represented in Fig. 12, occupies the entire vault of the cranium and parts of the face and neck, extending like a cape from the edge of the scapulæ across the neck, over the vault on both sides as far as the root of the nose. Below the superciliary ridge it extended in a curved arch to the corners of the mouth and

¹ H. Steinwirker, Dis. Inaug., Halle, 1872.

into a frontal, temporal, facial, and neck lobe. In the furrow separating the neck and facial lobes the ears can be seen unconnected with the tumor. Along the saggital suture a furrow separates it into symmetrical halves. No other abnormalities, excepting thickened lips, and a thickened, soft integument, marked by numerous rugæ and folds, was discovered. The cranial lobes were firmly attached to the bones, and the frontal and cheek lobes were softer than the neck lobes. The tumor mass was thickly interspersed with minute caverns, and had its origin in the cutis and subcutaneous tissue, and consisted mostly of connective tissue of varying density, rich in cells and abundantly supplied with vessels. The cells were principally the spindle and stellate forms. The fibres of the basic substance were curiously and variously interwoven, forming irregular fissures. These and the caverns were lined with endothelium and either empty or filled with a coagulum enclosing lymph corpuscles. The blood-vessels were very numerous, interrupted with frequent varicosities and densely filled with discolored, brownish-yellow discs.

The following analogous case, reported by Meckel,¹ exhibits a different arrangement of the masses, and caverns of pea size and larger :

CASE VII.—A six-months, foetus,² male. Entire head covered with a fleshy, spongy lump, which extended anteriorly, hiding the face, down to the chest, and stood out in sharp outline from the latter. The integument of the face, ears, extreme points of the fingers and toes, was fine and smooth; the rest of the skin showed gelatinous softening and augmentation of substance, and was interspersed with numerous caverns, some collapsed and others filled with lymph. At the points of the fingers and toes the transition of normal to abnormal integument was imperceptible; at the face, however, it was bounded by a fold-like reflexion. The line of demarcation passed over the lower part of the forehead down to the ear, then closely behind the latter downward and forward to the lower edge of lower maxilla, and around the mouth. At all these points the delicate integument suddenly passed into the enormous mask-like integument. The largest sac-like tumors were over the cerebral portion of the head and in the lumbar region. The skeleton was regular in form; bones, however, thin and cartilaginous. -

(To be continued.)

¹ Archiv f. Anat. and Physiol., 1828, p. 149.

² Cited by Steinwirker, Dis. Inaug., Halle, 1872.

REMOVAL OF A FIBROUS TUMOR FROM THE UTERUS BY
TRACTION, WITH REMARKS ON THE OPERATION.¹

BY

THOS. ADDIS EMMET, M.D.,

Surgeon to the Woman's Hospital of the State of New York.

(With two woodcuts.)

CASE.—Miss W., aged 28, of Bridgewater, Vt., was admitted to the Woman's Hospital May 21, 1876, with the following history:

Puberty was established at the age of 13; the menstrual flow lasted four days, with pain during the first day. She continued in good health until some eighteen months ago, when the period became gradually more painful throughout the flow, with an increase somewhat in quantity, but the duration remained unchanged.

About eleven months previous to her admission she began to appreciate a feeling of weight in the abdomen if she suddenly changed her position in bed. During the autumn of 1875 she noticed an increase in size, and in January last she detected, for the first time, a distinct mass just above the pubes. This enlargement increased rapidly in size until April last, when she consulted Dr. Rodman, her physician, who detected a fibrous tumor. After the examination she had a hemorrhage lasting a week, which was the first and only abnormal loss of blood. The menstrual flow had continued regular as to time, and had never lasted over four days. The increase in quantity would not have been noticed, if her attention had not been directed to it by her mother, who informed her that she used more napkins than had been her habit when at her age. Her physician administered the fluid extract of ergot, in drachm doses, three times a day, with the effect of arresting the hemorrhage; but the record of her case does not state how long its use was continued.

At my first examination, I found the abdomen filled with a tumor extending above the umbilicus, with its lateral diameter the greatest. The vaginal outlet was small, as well as the vagina itself. The uterus was reached high up in the pelvis, and, as in the early stage of labor, the cervix had disappeared, the os was dilated, its edges were thin, and the tumor presented. The finger could be readily introduced within the uterine cavity, and the lower attachment of the tumor was felt just within the anterior lip, a little to the left side, with a

¹ Reported to the N. Y. Obstetrical Society, June 13, 1876.

broad base, increasing rapidly in width from below upward. The uterine probe was introduced within the cavity nearly eight inches, but in consequence of the great curve of the canal, running up posteriorly and to the left, it was not certain that the fundus had been reached.

May 25th, at 12 M., one-half drachm of the fluid extract of ergot was administered, with the effect of exciting uterine contraction within twenty minutes after it had been taken. This dose was repeated in the evening, and three times on the 26th inst., with the effect of causing no disturbance of the stomach, but frequent uterine contractions. May 27th, 9 A.M.—The ergot was omitted, and morphine administered to lessen the severity of the uterine pains; this

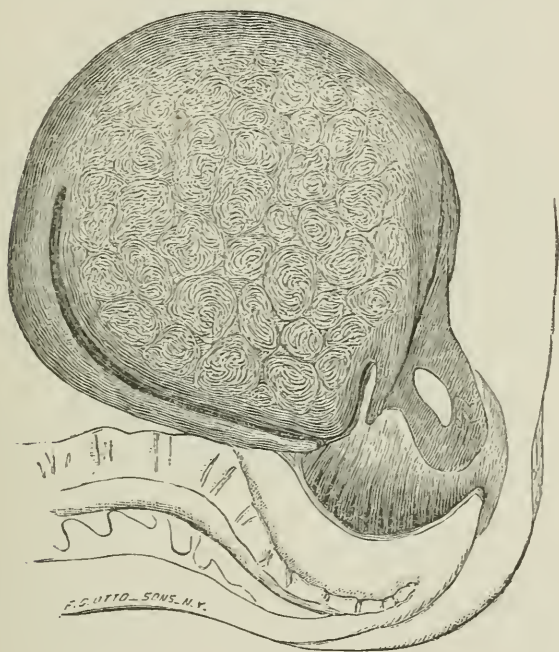


FIG. 1.

was repeated at 3 and at 9 P.M. Although the pains had been frequent and severe at times, she had continued to go to her meals and to be about her room until bedtime of the 27th inst. She remained in bed during the 28th inst., as the tumor was advancing into the vagina, and the ergot was again administered in sufficient doses to keep up a moderate degree of uterine contraction. At 9 P.M., May 28th, I made an examination, as Dr. Anway, the house surgeon, had detected, as he thought, some odor. I found the vagina about half filled by the tumor, the os well dilated, without the slightest evidence of decomposition. The patient complained of feeling tired, but was

cheerful, and I felt that the case was progressing favorably. I made no change in the treatment but to discontinue the ergot, and found, on inquiry, that the vaginal injections had been given regularly. May 29th, she was kept quiet in bed, and somewhat under the influence of morphine, as she was beginning to feel exhausted from the uterine contractions. May 30th, in the morning, the odor was marked for the first time, and at 2 o'clock I commenced the removal of the tumor, after the patient had been placed under the influence of ether.

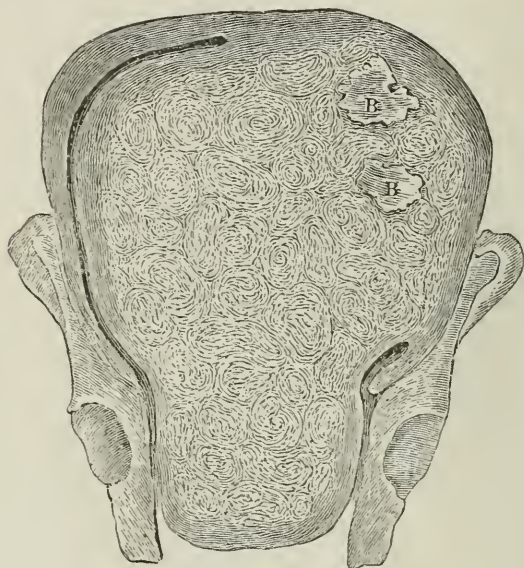


FIG. 2.

I found the tumor now filling up the whole pelvic canal, and already breaking down in the portion presenting. Its shape was not unlike that of the cork of a champagne bottle, the compressed portion being in the pelvis. I first attempted, but failed, to pass a cord around the mass by means of Gooch's canula. To this I wished to make a slip-knot, to be used in making traction and to steady the mass as it was being removed.

The operation was proceeded with by the removal of the mass from the vagina, piece by piece, with the scissors. I would advance my index finger of the left hand as high up behind the mass as I could, and, while protecting the soft parts, draw down, with a double hook, some portion of the tumor into view. Although the uterus contracted promptly from the beginning of the operation, and firmly compressed the tumor, it did not advance into the vagina as is usually the case. When I had reached the plain of the superior strait,

and the cervix was not brought into view, I was puzzled as to the proper course. I profited, however, by past experience in realizing that the danger to the patient was less in completing the operation, than to leave a portion of the tumor behind to break down in a few hours, and likely cause blood poisoning. I continued to advance through the centre of the tumor until the surface was almost beyond reach of my instruments. It became then necessary to introduce my hand within the vagina, and, in doing so, the perineum was partially lacerated. The advance was now very tedious, as the tumor had been broken down in shreds, and neither the tenaculum nor forceps could grasp but a small portion at a time. The condition of the patient began to indicate exhaustion, and the administration of brandy was commenced by hypodermic injections. The uterus still continued to contract, and had been reduced much in depth, but the lateral diameter was increased, as shown in Fig. 3. I now realized

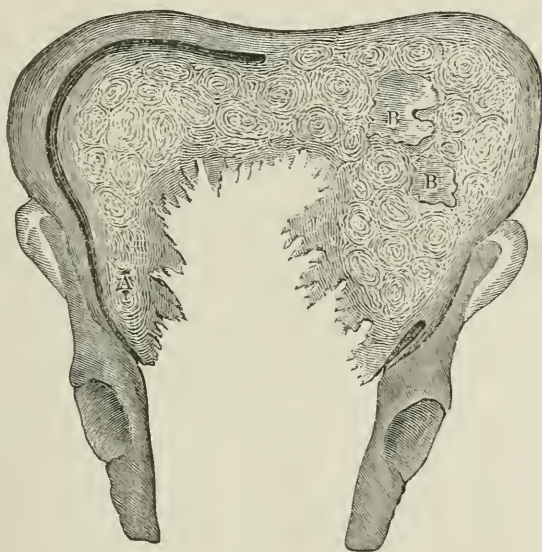


FIG. 3.

how the expulsive power of the uterus had been lost, and why the tumor had not continued to advance into the pelvis. Before the operation the os had been dilated to the fullest extent of the pelvic canal, and as the tumor came down, being larger above, the lips had been crowded off on to the brim of the pelvis. This difficulty was increased as I had advanced through the centre of the tumor, for the expulsive power of the uterus, being lost on the pelvic brim, could only add to the lateral diameter.

I placed the patient on the left side, and introduced the largest size Sims' speculum. The appearance presented by the dilated va-

gina, in connection with the excavation which had been made into the tumor, was indeed formidable. By means of a large hook, I drew forward the lower edge of the tumor, on the right side, at A, Fig. 3, until I brought into view a portion of the surface which projected into the uterine canal. This I seized with another hook, and being the outside of the tumor, and covered with the lining membrane of the canal, was firmer. I was soon able to advance several inches beyond, and, while steady traction was made by Prof. Howard, of Baltimore, who was then assisting me, I was able to remove with the scissors a large mass which had lodged on the brim of the pelvis. The uterus began now to change rapidly in shape, and the whole circumference of the os was brought into view. By contraction of the uterus the remains of the tumor were forced into the vagina as fast as the mass within reach could be removed. At length the attachment was reached, and was found to have been reduced to a pedicle not larger in size than the index finger. The uterine cavity was yet sufficiently dilated to admit of partial inversion by traction, and the pedicle, formed at the lowest point of attachment, just within the anterior lip, was divided in view at the labia. The inverted portion was returned without difficulty, and by the use of Sims' speculum the whole cavity was brought into view. By this means it was demonstrated that there had been no enucleation of any portion of the tumor, and that the whole living membrane of the cavity was intact, except at the point where the pedicle had been divided. By contraction the tumor had been displaced from the uterine tissue, and as it closed in behind the mass its cavity became lessened until the extent of attachment, which had existed at the beginning, became gradually narrowed to but little more than the outer covering of the tumor, which then formed the pedicle.

The cervix was found very much discolored, and had already begun to slough, in consequence of the continued pressure which the tumor had produced on the brim of the pelvis. The patient was placed on the back, with a bed-pan under her, and, by means of two Davidson's syringes, a large quantity of hot water was thrown into the uterine cavity, with the effect of causing rapid contraction. She was again placed on the side, and the speculum introduced. The uterine cavity had now been reduced to the depth of some five inches, but as an additional precaution Churchill's tincture of iodine was applied to the cavity and to the blackened surface of the cervix. The patient was then placed into bed in a much better condition than she had been at one stage of the operation, when her pulse indicated an approaching collapse. Some ten drachms of brandy were, from time to time, administered in small quantities, by means of the hypodermic syringe. Without its judicious use by my assistant surgeon, Dr. George T. Harrison, and Dr. Anway, the house surgeon, I believe she would have sunk before the operation could have been completed.

The operation occupied two hours and a half, and the tumor, as removed, weighed eight pounds, without estimating the loss in the contents of several small cysts which were erupted. The loss of

blood throughout the operation was small in quantity, and confined almost entirely to a small vessel ruptured in the perineum. Two dense fibroids, one as large as a hen's egg, were turned out from the mass at *B, B*, Fig. 3, and were different in character from the tissue surrounding them. They had not yet undergone calcareous degeneration, but were so hard that it was difficult to cut into them, and had evidently been subjected to great compression.

An hour after the operation the pulse became weaker and rose to 175 per minute. She continued to sink rapidly, soon became unconscious, and died nine hours and a half after the operation. She had been sweating profusely during the operation, and the same condition of the skin continued until her death.

As one of the depressing influences in her case, it should be stated that, while she submitted cheerfully to any treatment, she had already become impressed with the belief that she would die. Her last act, I understand, before taking the ether, was to designate the clergyman whom she wished to conduct her funeral. She certainly was more apprehensive of the result of the operation than myself.

I have removed eleven or twelve fibrous tumors by this method, after they had begun to enter the vagina, and several were already far advanced in decomposition. These tumors have weighed from three to eight and a half pounds after their removal in pieces. I have removed but one tumor larger than this one, and the patient recovered. I deprecate any attempt to enucleate such a tumor, from the fact that we cannot know how far the uterine tissue may have become involved. If the uterine wall has become too thin to contract properly, death from hemorrhage will likely occur before the completion of the operation. Should the patient survive this, the danger is equally great afterwards that death will result from blood-poisoning. The question of enucleation for small fibroids has no connection here, for the circumstances are entirely different. I am conservative in practice to delay all surgical interference as long as possible. But so soon as the tumor presents at the os, and it begins to dilate, we then have proof that a reasonable amount of uterine muscular tissue remains to aid us. It then becomes a question of judgment as to the time and mode of administering ergot. So soon as the vagina becomes occupied by a portion of the tumor, the operation for its removal cannot be delayed, for it becomes now a question of but a few hours before blood-poisoning may supervene. When the operation has been once commenced, there is but one course to follow in

removing the entire tumor, as the one attended with the least evil and risk to the patient. When the tumor can be forced out by uterine contraction, as rapidly as it can be removed at the vaginal outlet, the operation is attended with but little risk of life. This case has been an exception; for, in my experience, when the tumor has been brought down to a pedicle, there has been no greater disturbance than that attending any ordinary case of instrument labor. Our purpose is at first to excite uterine contraction by traction on the tumor, and this stimulant is maintained as it is being removed, piece by piece, from the vagina. So that from the commencement of the operation until the tumor has become pedunculated, the process is a perfectly natural one, and we have been but aiding nature. As there is no fear from hemorrhage, since the supply of blood is cut off as soon as the uterus begins to contract, our best means for removing the tumor is a pair of blunt-pointed scissors, curved on the flat side. The *écraseur*, I have found, is not so well fitted for the purpose, as it does not excite the uterus to the proper amount of contraction, nor can we remove the mass as rapidly as with the scissors. The operation is best begun by passing a slip-knot high up around the mass, which is to be held by an assistant, to steady the uterus and for making traction. After having removed the portion which first filled the vagina, it is best to follow afterwards, as far as possible, the course of the uterine canal. The advantage is twofold, since the portion projecting into the canal, with the capsular-like covering, is firmer, and by removing first the tumor at the most distant point, the line of attachment becomes narrowed as the uterine cavity can be lessened.

At the last meeting of the State Society I presented a paper on this subject, and, as it has been published in the recent volume of its transactions, it is scarcely necessary that I should enter into detail at greater length than I have already done.

I would refer briefly to some features in the history of this case which are rarely met with, and are of importance to be fully considered under like circumstances. That there should have been so little menstrual increase from the growth of such a tumor is an unusual circumstance. From this fact, and in consequence of being in such a perfect state of health, the shock of the operation was greater than it would have been under

ordinary circumstances. It is probable that the point had already been reached in the progress of the case when the uterus would have forced, in a few days, the tumor into the vagina. It is also likely that its course may have been as rapid without the aid of the ergot, and the same steps of the operation would then have been as imperative. Yet the result in this case has impressed me with its bearing. In a like case, with the general health unimpaired, and with the tumor so large above, I will, in the future, bring about a more gradual dilatation, if it be possible to control the action of the uterus. By this course a degree of tolerance may be established, and the shock of the operation lessened. In proportion to the action of the uterus must its own supply of blood be lessened, and that to the tumor cut off, thus increasing the danger of blood-poisoning from sloughing of the parts most subjected to pressure. In consequence of the unusual shape of this tumor the cervix was forced back upon the brim of the pelvis, and from continued pressure had already begun to slough some hours before the portion of the tumor presenting in the vagina gave any indication of breaking down. On the morning of the operation there were symptoms of blood-poisoning detected, which impaired her condition somewhat for standing the shock of an operation unusually prolonged from the difficulties in its execution. Yet, guided by past experience, the progress of the case was carefully watched, and the time of the operation well chosen. For, under ordinary circumstances, it is advisable to dilate rapidly, and to delay the operation until the tumor begins to break down. We thus insure the greatest amount of dilatation to be gained, with the advantage of there being as much of the tumor already in the vagina as possible before commencing the operation.

SOME FACTS IN REGARD TO THE ANATOMICAL DIFFERENCES
BETWEEN THE NEGRO AND WHITE RACES.

BY

EDWARD B. TURNIPSEED, M.D.,

Columbia, South Carolina,

Knight of the Order of St. Anne, Third Class of Russia, Recipient of the Sevastopol and Commemorative Medals, with the Ribbons of the Orders of St. George and St. Andrew respectively attached, etc., etc.

I WILL first quote from an article published by me in the "Richmond and Louisville Medical Journal," of May, 1868, page 194: "I am not aware that it is known to the scientific world that the hymen of the negro woman is not at the entrance of the vagina, as in the white woman, but from one and a half to two inches from its entrance in the interior, with an opening below for the passage of the menses. I have examined a good many cases, and have found this invariable, etc., etc. I have concluded that this may be one of the anatomical marks of non-unity of the races," etc., etc.

CASE I.—Some time during the summer of 1865, I was requested by Mr. N. I. D., of Richland County, S. C., to examine and treat a negro servant-girl for some vaginal disease. On the introduction of the speculum in the presence of the above gentleman, we discovered that it passed only a short distance from the entrance of the vagina, when an obstruction was met, and it was impossible to pass it farther because of the pain it produced. I then opened the instrument when I found that the obstruction was the hymen, yet perfect, abnormally thick and resistant, situated one and a half to two inches from the entrance of the canal. She had quite a number of chancres on the external side of the hymen and vaginal walls, but on the internal side the parts seemed healthy, showing that the man (of her own color), known then to be diseased, and who, she acknowledged, had given her the disease, had partially succeeded in his purposes, notwithstanding the hymen remained intact, which could not have been done if the hymen was situated in this race, as physicians have heretofore been taught it was situated in all human races.

CASES II. AND III.—On Feb. 2, 1875, I was subpoenaed to appear before the courts to give evidence in a case of attempted rape upon a negro girl, nine years old, by a negro man. The examination of this

little girl, both at the time of the attempted outrage, as well as the morning of the trial, fully corroborates this discovery of the location of the hymen in this race. Of course the distance from the entrance of the vagina in girls of this age is not so great as in the adult. In this girl, as well as a little friend of hers examined at the same time, I found the hymen perfect and situated from one-fourth to one-half inch from the entrance of the vagina, with an opening below.

On July 22, 1876, in the presence of Dr. Frank Green, of Columbia, S. C., I examined the following cases :

CASE IV.—A negro girl, aged 8 years ; found hymen distant from entrance one-half inch, opening in the centre.

CASE V.—A negro girl, aged 12 ; hymen three-quarters of an inch from entrance of vagina, opening in the centre.

CASE VI.—A negro girl, 9 years old ; hymen one-half inch from entrance, opening in the centre, but somewhat lacerated at its left inferior portions.

CASE VII.—July 24, 1876, examined, in the presence of Dr. Frank Green, a negro girl, eleven and a half years old ; hymen three-quarters of an inch from entrance of vagina, perfect, with opening in the centre.

CASES VIII. AND IX.—Dr. Green reports two other cases he examined after this, which fully corroborate the above facts.

Although more than eight years have elapsed since I published this anatomical difference in the races, and the journalists have called on their readers for further information, yet up to this date there has been no refutation ; therefore I conclude the profession has accepted the truths as herein stated, as well as my claims of first pointing them out. The knowledge of the position of this membrane in the negro race is of vital importance to the profession, from two distinct standpoints : first, as one of the anatomical indications Providence has given us of the non-unity of the races ; and, second, in a medico-legal point of view—cases under the criminal laws, such as rape, frequently occurring in the Southern States.¹

¹ [NOTE.—We trust this second communication from the author on this subject will call forth decided facts either corroborating or refuting his observations, as to the correctness of which we ourselves, we confess, have not been able to overcome some doubts. Surely there must be many physicians, both North and South, who are able to throw light on this, if true, certainly very remarkable anatomical feature in the negro race, which thus far would appear to have escaped scientific observation.—EDITOR.]

WARREN: *Dyspareunia.*

DYSPAREUNIA.

BY

JOHN S. WARREN, M.D.,

Physician for Diseases of Women at Demilt Dispensary,
New York.

CASE I.—Mrs. I., a young Hebrew woman, *æ*t. 24, married two years, first came under my notice at Demilt Dispensary in 1873, complaining of dysuria and irritation of the urethra, which did not permit of sexual intercourse, unless with great pain and agony to herself. An examination revealed a small caruncle growing at the urethral orifice, which was exquisitely sensitive and tender to the touch. Vagina rather short, and uterus small.

The growth was removed under an anæsthetic, and she had apparently been cured of her disease, until a month later she returned, and said her trouble was as bad as ever, and that it was still impossible for her to allow the sexual act to be performed. A second examination showed that the urethra was still red and inflamed, but that the growth had not been reproduced; and upon a more careful examination I found that the vaginal opening was much behind its natural seat, on account of the great width of the pubic arch, which, together with an excessive amount of adipose tissue, and probably an awkward attempt at connection on the part of the husband, had prevented complete intercourse, which had really occurred but a few times since her marriage.

The treatment now adopted in her case was, first, to allay the extreme irritability about the urethra—a condition due entirely to the misdirected efforts at coition; and, secondly, to gradually dilate the vagina.

The former results were effected by the healing and anæsthetic action of carbolic acid, locally applied, while the vulval opening was put somewhat upon the stretch by the ordinary bivalve speculum, and afterwards the insertion of a medium-sized dilator (Sims'). This treatment, pursued for a few weeks, entirely subdued the highly sensitive and painful condition of the parts, and natural intercourse could be borne without pain.

CASE II.—Mrs. C., *æ*t. 27 years, nullipara, married ten years, a spare, delicately organized lady, came to me in March, 1876, complaining of a disagreeable pressure in the left iliac region, and constant dysuria. She had not been well since her marriage, ten years ago, but had suffered almost constantly. From symptoms given, and upon further inquiry, I found that coition had always been painful and dreaded by her. An examination found the vagina and uterus of natural size, but the latter was affected by a left latero-anteflex-

ion, and considerably tender when any attempt was made to restore it to its normal situation; and when the finger was drawn along the course of the vesical neck, great pain was induced. The urine gave no signs of cystitis, but the mucous membrane of the urethra appeared highly red and congested, but with no discharge of pus.

A persistent use of cotton suppositories between the cervix and pubis relieved for the most part the unpleasant feeling of pressure upon the left side, but the dysuria continued to give her great suffering, until the canal had been locally treated by the application of carbolic acid, followed a few days later by an iodoform and belladonna ointment, inserted in the inflamed canal. Since then she has been entirely relieved of all unpleasant symptoms, and coition is painless.

CASE III.—Mrs. L., *æt.* 24 years, married four years, has one child two years of age, a healthy, well-formed woman, but exceedingly nervous and hysterical, consulted me in March, 1876, because she “always suffered pain when her husband came to her,” which trouble had existed since the birth of her child; had occasional backache, and said she was becoming more nervous and excitable every day. Her uterus was found to be sharply retroflexed, considerably congested, and very tender. After its replacement, for the first two weeks, I succeeded in retaining it in position by the use of cotton and glycerine pessaries, and later a hard rubber instrument was well borne. Her backache entirely disappeared, but an uncomfortable burning sensation continued in that region, which I found to be caused by the displacement of the left ovary into the posterior cul-de-sac. A few repeated repositions, with enjoined rest, have completely, thus far, relieved all her sufferings, and she is now as well as prior to her confinement.

The above cases, with many others which might be cited, have impressed me with the belief that in a very large proportion of uterine disorders, this symptom—(painful coition), for which Dr. Robt. Barnes of London has coined the new word “*dyspareunia*” which heads this paper—is too frequently overlooked, either by the physician on account of its comparative unimportance, or the disagreeable subject, or by the patient from her delicacy in referring to it without being directly questioned, no matter how much her sufferings may have been. Even a momentary consideration of the anatomical structure of the female pelvic organs will show us how profusely their tissues are supplied with blood-vessels and sensitive nerves, which in their turn are ever ready, upon the slightest irritation or diseased condition, to produce congestion and its accompanying nervous derangement.

The variety of causes that produce this condition are ex-

ceedingly numerous, and need hardly be enumerated to any physician with a fair amount of gynecological experience. Still, among the most prominent I may mention that it may commence with marriage, when an unnatural situation of the vulval orifice, together with violent or awkward attempts at connection, occasion urethral irritation and caruncles; or, again, the ruptured hymeneal membrane may be the seat of irritable carunculæ or ulcers, the latter particularly towards the perineum, which, like anal fissures, are a source of constant distress and uneasiness, and with no tendency to heal voluntarily. These fissures may occur, too, when the vagina, though originally sufficiently capacious for marital purposes, has been lacerated from child-bearing, and the new cicatricial tissue which has formed at the border of the perineum has, from lack of elasticity, slightly torn, leaving an irritable crack or ulcer, which may make coitus always to be dreaded and painful on the part of the female. Any of the dislocations, too, to which the uterus is subject, may be a source of pain, from the strain upon the uterine ligaments, from pressure upon the vesical neck or urethra, or from a displaced ovary. The latter is especially not infrequent in cases of retroflexion, and may still exist when we have reduced the displacement and have apparently removed the exciting cause of discomfort and distress.

Again, whenever, subsequent to parturition or abortion, the process of involution has been arrested, and the uterus remains enlarged and elongated, the increased weight and lengthened cervix both combine to shorten the vaginal canal, and by that means expose the hyperæmic and tender organ to frequent mechanical irritation during intercourse. So, too, in that peculiarly hyperæsthetic condition at the outlet of the vagina, which is denominated vaginismus, and which has for its cause some local inflammatory affection of an acute nature, every attempt at sexual intercourse may cause almost intolerable suffering to the female.

Of course it is hardly necessary for me in addition to notice those more acute diseases of the uterus and vagina, like vaginitis, cellulitis, and pelvic peritonitis, the sudden occurrence of which and great suffering compel the patient to apply immediately for relief, and which direct the attention of the physician to the real disease and the appropriate treatment.

As the design of this paper is to simply hint at the importance of a *symptom* which is so frequently an accompaniment to all others connected with uterine disease, and which may from its character not only render the life of the female a burden to herself and those around her, as well as entail barrenness and perhaps separation, I shall not specifically refer to treatment that may be used in individual diseases, but will generally express my belief that it is always necessary to learn if this *symptom* exists whenever we are called upon to treat any affection of the female genital organs; and, if so, we should attempt its relief from the fist, even if the cure or alleviation of the prominent disease cannot be effected until a somewhat extended treatment has been pursued; as, for instance, if an inflamed condition exists about the urethra or within its canal, together with some uterine displacement, we should treat that affection locally and internally, as is necessary, while at the same time we apply a mechanical support to the uterus; for in many instances the removal of the original cause may not be sufficient to cure a condition which has become chronic from neglected treatment.

If the external opening of the female genitals from congenital or traumatic cause appears abnormal in situation or size, we should, by gradual expansion and the use of dilators, increase its capacity, and thereby prevent injury to the exposed parts; or, if a subinvolted uterus from increased weight and relaxation of its supports crowds its way forward into the vaginal passage, and presents, in addition, a cervix lacerated from previous labor, we should, while pursuing the ordinary treatment, give it rest and support by means of a well-fitting pessary; and, finally, we should in every instance seek, after properly explaining to our patients the nature and cause of their ailment, to afford the utmost rest possible for the affected parts by interdicting in a measure sexual connection, which is likely to be persisted in from habit or from the desire that sterility may be overcome.

A CASE OF FIBROID TUMOR OF THE UTERUS, CAUSING ECLAMPSIA; WITH REMARKS ON UTERINE FIBROIDS IN GENERAL, AND ON THE CAUSES OF PUERPERAL AND NON-PUERPERAL ECLAMPSIA.

BY

B. B. BROWNE, M.D.,

Baltimore, Md.

PATHOLOGISTS and gynecologists agree as to the great frequency of fibroid tumors of the uterus.

The well-known assertion of Bayle that twenty per cent. of all women dying after the age of thirty-five have fibroid tumors in the uterus, and Klob's statement that undoubtedly forty per cent. of the uteri of females who die after the fiftieth year contain fibroids, are generally admitted to be nearly correct.

Virchow declares, as the general impression of his experience, that he has examined few cadavers of old maids without finding myomata, while in the cadavers of many women who had borne children, even in those who had reached old age, the uterus remained free.

American authors state that fibroid tumors frequently occur in colored women, while ovarian tumors and uterine carcinoma occur but seldom among them. Dr. Peaslee says that in nearly every colored woman upon whom he had made an autopsy, fibroids were present, and that it was a rare exception not to find them.

Sims states that of 225 women who had once borne children and then become sterile, 38 had fibroid tumors, or about 1 in 6. Of 250 married women who had never borne children, 57 had fibroids, or 1 in $4\frac{1}{2}$. In 100 unmarried women, 24 had fibroids, or 1 in $4\frac{1}{6}$. Thus, of 575 cases (100 being unmarried and 475 married and sterile), 119 had fibroid tumors, or about 1 in 5.

Winckel states that of 555 patients with myomata, there were 140 single and without children.

134 married, but sterile.

281 had one or more children.

Tilt, in his table of diseases of the reproductive organs at the change of life, gives only four cases of fibroids occurring in 500 women suffering from uterine diseases.

A large number of these tumors occasion no marked distress, and some of them attain great size without causing any inconvenience, and the patient only discovers by accident that she is the subject of disease; a most striking example of this kind is related by Sir James Simpson: "Of a young unmarried lady, a governess; everybody was talking of the tremendous blunder which had been made by a distinguished obstetrician, in having diagnosed pregnancy in one of Her Majesty's maids of honor, who was the subject of ovarian tumor. It seemed that many women were led to examine their own abdomens, and in this way the young lady first had her suspicions aroused; and although she had never suffered from any kind of discomfort, the uterus was found enlarged to the size of a uterus at the full term of pregnancy, from the growth in its walls of a large fibroid tumor." These tumors are a frequent cause of sterility.

In 67 cases of fibroid tumors treated by Graily Hewitt, 29 were sterile; in 169 cases treated by Dupuytren, Malgaigne, West, McClintock, and Schroeder, 50 were sterile. But if pregnancy occurs they enlarge very much with the development of the uterus, so much so that the peritoneal variety have sometimes been mistaken for extra-uterine and tubal pregnancy; sometimes interfering with parturition, they have been mistaken for twin pregnancies. In a case attended by a midwife, I was sent for about twelve hours after the delivery of the child, to deliver the other one, which the midwife said was fast and could not come away. Upon examination I found a tumor outside of the uterus, which was freely movable and was as large as a foetal head at full term. Upon palpation over the abdomen the outlines resembled the shape of a child. With involution of the uterus the tumor decreased rapidly in size, and at the end of six weeks could scarcely be detected. Ergot was given internally and tincture of iodine applied over the abdomen. We cannot, however, attribute the disintegration of the tumor to the treatment, for we know that they have in many cases undergone resolution without any medication whatever.

The character and appearance of an intra-mural fibroid tumor depends very much upon the condition of the uterine parenchyma by which it is surrounded; this tumor participates in all the changes to which the uterus is subject during menstruation and pregnancy. Its development always begins in the uterine tissue itself, as a local hyperplasia; it sometimes lies in the muscular substance of the uterus without a capsule, sometimes it is attached to the uterine parenchyma by a pedicle or base, through which the blood-vessels pass to the tumor; this attachment frequently atrophies, and the vessels becoming obliterated, the tumor remains an isolated and embedded fibroid.

Nearly all modern authors have stated that very little or nothing is known of the causes of fibroid tumors (Virchow, Scanzoni, Thomas, Churchill, Schroeder, etc.); and Sir James Simpson says, in regard to their cause, "that we do better to confess our ignorance than to busy ourselves with vague and valueless hypotheses."

Winckel, of Rostock, in a recent article on uterine myomata, gives the following causes: the effort made in lifting heavy bodies, or long-continued high reaching, often produce severe uterine bleeding, and undoubtedly intra-mural hemorrhages, which lead to the formation of myomata; severe shaking of the body or excessive mental agitation, with accompanying bleeding, may have a like result. A violent emetic was the seeming "*fons et origo mali*" in one case. Unusual hyperæmia of the uterus, active or passive, during menstruation, is often the starting-point of partial hyperplasia. In one case of a choir-singer, severe efforts while practising seemed to be the primary cause. The labors of teachers, and particularly the use of the foot-bath, for the purpose of cutting short the menstrual flow, and dancing during the flow, are mentioned as having brought about the disease in a number of cases. The principal danger from fibroid tumors is the occurrence of hemorrhage or septicæmia.

Surgical interference with those having sessile attachment has been exceedingly fatal, and especially is this the case with those thus attached to the posterior wall of the uterus. Dr. Barnes states that up to this year his experience with these cases had not been such as to make him consider the

operation of removal excessively dangerous; but having three cases, in succession, prove fatal after the removal of the tumor with the *écraseur*, he would now be exceedingly shy of operating upon them. He says that a slow necrosis sets in at the stump or site of attachment to the uterus, which rapidly develops septicæmia.

The ergot treatment has no doubt caused the disintegration and absorption of many fibroid tumors, whose structure and situation have been favorable for its action; especially non-capsular intra-mural tumors with a preponderance of muscular structure; but firm, hard, capsular fibroids, composed almost entirely of connective tissue, are very slowly affected by its influence. These firm, hard fibroids are supposed to become smaller and harder after the menopause, and it is in them that calcification often takes place. About two years ago I saw, in the practice of Dr. Pearson Chapman, of this city, a patient suffering with excessive and uncontrollable uterine hemorrhage. The uterus was removed after death, and was found to consist of one solid calcareous mass, $3\frac{1}{2}$ inches long and $2\frac{1}{2}$ inches in diameter, and pear-shaped; there was a small aperture at the situation of the os, into which it was difficult to pass a fine probe; the ovaries and surrounding organs were healthy in appearance; the uterus, as described by Dr. Chapman, was similar to one removed by Krauss and mentioned by Klob¹ (*Path. Anat. Female Sexual Organs*, p. 178).

The following case of fibroid tumor came under my care about the last of April, 1875:

Mrs. Annie F., aged 36, married six years, sterile, had suffered severely with dysmenorrhœa for several years, and had a gradually increasing enlargement of the abdomen, which had attained the size and appearance of a woman in the seventh or eighth month of pregnancy. Upon examination it was found that she had a fibroid

¹ In place of the uterus, a pyriform osteoid tumor was situated between the rectum and bladder, close to the right margin of the pelvic entrance, and extending downwards as a cartilaginous mass, in form like the vaginal portion, without an aperture. The thin, broad ligaments, together with the oviducts, were inserted bilaterally above the point of transition of the tumor into the cartilaginous appendix. The ovaries consisted of thin, narrow, partly ossified, cartilaginous scales. The tumor being sawn through, exhibited a bony structure, denser in some parts and more porous in others, and in its centre an oblong cavity was found, the size of a walnut, with irregular walls, and a few transverse osseous filaments.

tumor the size of a foetal head in the anterior wall of the uterus; the sound passed six and one-half inches above and to the left of the umbilicus; the cervix was high up, almost on a line with the promontory of the sacrum. She was treated with hypodermic injections of aq. ext. of ergot, according to Hildebrandt's method, three grains every alternate day, for more than a month; but there was no improvement—on the contrary, the tumor seemed to enlarge. On the 28th of May she was seized with convulsions, which were of such intensity and duration, and followed each other in such rapid succession, that she had no time to regain her consciousness, but remained in a condition of complete coma, which was only disturbed by the occurrence of another paroxysm.

She had cedema of the face, legs and feet, and complete retention of urine, but there was no albumen in it. This condition continued about ten days, when she passed into a state of raving delirium. Bromide of potash, chloral, etc., having no effect in quieting her, and the tumor having increased rapidly in size, it was concluded to put her thoroughly under the influence of chloroform, and to make a uterine examination. The cervix was found tightly wedged in against the sacrum, and was dislodged with difficulty; the posterior lip was ulcerated off and appeared as if it had been adherent to the walls of the vagina; the sound passed six and one-half inches, and upon its removal a thick, dark discharge passed freely from the uterus and continued for about three days, to the patient's great relief. A few hours after it stopped she was again seized with convulsions; upon examination it was found that the cervix was again lodged in its old position and its canal entirely occluded. When the sound was removed the discharge came on as before, and remained about the same length of time, but as soon as it ceased the convulsions again recurred; this time the cervix was found blocked up by a mass of semi-organized material, upon the removal of which the discharge again became free. It was now determined to incise the cervix in order to keep the canal patulous; after this healed, the fundus was elevated and the anterior vaginal cul-de-sac was firmly packed with cotton plugs saturated with glycerine, as recommended by Sims in cases of anteversion, and another plug was placed behind the cervix, which held the uterus in its normal position. This produced copious discharges of a dark, lumpy character, and seemed to soften the tissues of the uterus. It was found that keeping the uterus thus in place was not only relieving the convulsions, but that the tumor was undergoing rapid diminution in size, so much so that in about eight weeks after this treatment was adopted the uterus could be maintained in its normal position by a suitable pessary, which, in conjunction with a well-fitting abdominal supporter, gave such great relief and comfort that she could walk about with ease and no enlargement could be noticed. The sound passes three and one-half inches, and her menstrual discharge has been regular and free from pain.

The cause of the convulsive paroxysms in this case was at-

tributed to pressure and irritation of the sympathetic ganglia of nerves, which, according to Dr. Robert Lee's papers on the "Anatomy of the Nerves of the Uterus" (published in the Transactions of the Royal Society of London), are situated in front of the lumbar vertebræ and along the line of the anterior sacral foramina. Dr. Lee states that these nerves increase very much in size, both in physiological and pathological enlargements of the uterus. Flint states that small cells are found at the termination of the sympathetic nerve-fibres in the substance of the uterus; while Quain states that they are distributed principally to the neck and lower part of the body of the uterus.

Claude Bernard's experiments have clearly proved that the nerve fibres devoted to the conduction of sensory and motor impulses, issuing from the spinal cord, had been joined by a third set of fibres either proceeding directly from the sympathetic ganglia, or through and beyond these from some part of the cerebro-spinal system, the office of which is to preside over the contraction of the vessels and calorification. A further corroboration of this view was obtained by experiments in which the lumbar ganglia of the sympathetic were destroyed, when the vascular changes and increase of temperature in the lower limbs were observed without the occurrence of any paralysis.

But now that the duality of the vaso-motor system of nerves has been established by the experiments and researches of Vulpian¹ and Schiff, who have proved that all vascular nerves may be resolved into two mutually antagonistic sets—the "*constrictor*" nerves and the "*dilator*" nerves—the normal tonicity of an artery being due to the balance kept between these two vaso-motorial agents, we are no longer compelled to account for all these changes by the worn-out theory of "*passive dilatation*."

The most convincing fact of the existence of these dilator nerves is in the recent experiments of Schiff, who has found that all erectile organs are supplied by nerves, the stimulation of which is followed by an increased flow of arterial blood into the erectile tissue.

Now, in regard to puerperal eclampsia, we find it occurs

¹ Leçons sur l'Appareil Vaso-moteur, par M. Vulpian. Paris, 1876, pages 177-78.

most frequently in primiparæ and in those cases where there is excessive pressure upon the pelvis and spine, or where the articulations are ankylosed. Dr. Collins, in his work on midwifery, containing a report of 16,414 women delivered at the Dublin Rotunda Hospital, during his seven years' mastership, states that 30 cases of convulsions occurred, 29 of which were in women pregnant for the first time.

Winckel states that eclampsia often occurs with twin pregnancy, and corroborates the statement of Mauriceau that it is comparatively frequent in women bearing children for the first time when advanced in years.

In a series of nine cases of albuminuria and eclampsia recently reported in the *Obstetrical Journal of Great Britain and Ireland*, by Dr. Angus McDonald of Edinburgh, seven were primiparæ, one of whom had twins; one was confined in the house where she had been nursing her children with the scarlet fever, and one was a woman whose mental condition was bordering on the limits of insanity.

He divided them into three classes: 1st, albuminuria without eclampsia; 2d, albuminuria with eclampsia; 3d, eclampsia without albuminuria.

Winckel states, that "the presence of albumen in the urine is by no means a constant phenomenon of eclampsia, and that the so-called uræmic theory of Frerichs is not applicable to all cases of eclampsia, and it is very doubtful whether it can be adopted in any case whatever. On the other hand, Traube and Munk have demonstrated that when œdema of the cerebrum is occasioned by an *increase in the quantity of serum contained in the blood*, and by *tension produced in the arterial system*, and is succeeded by *anæmia of the brain*, coma sets in, and later convulsions ensue as soon as this anæmia extends from the hemispheres to the mesencephalon. The existence of two causative agents has thus been established—anæmia and increased tension of the arterial system; and two conditions of the brain are shown to be associated with eclampsia—at first the cerebral œdema, and subsequently anæmia, particularly of the mesencephalon. But whether Frerichs' or Traube's theory is correct, the result can only be attained through the vasomotor nervous system by some irritation, which overcomes the

antagonism between the *constrictor* and *dilator* vaso-motorial agents, allowing the dilators preponderance of power.

The recent investigations of Budin¹ of Paris, although made for an entirely different purpose, throw considerable light upon the cause of puerperal eclampsia, and afford a good explanation of its more frequent occurrence in primiparæ and in those who have children for the first time when advanced in years. A woman being admitted into the Maternité Hospital, who had nearly reached the full term of pregnancy, could not walk on account of the great mobility of the pubic articulation, which was so much relaxed that ascent and descent of the pubic bones alternately took place when any attempt was made to walk.

Ten days after her confinement she could walk perfectly well, and wished to leave the institution. An examination was then made, and it was found that there was only a slight movement in the pubic articulation.

Observations were afterwards made in eighty other cases, and the following conclusions were the result :

1. That in all pregnant women there is a certain degree of mobility in the symphysis pubis during the last month of pregnancy, and that the sacro-iliac articulations are also relaxed during that period.

2. That these changes increase as the termination of pregnancy approaches.

3. That in primiparæ these changes take place only to a very limited extent, but are decidedly marked in women who have had many children ; and in those who have had seven or eight the relaxation is sometimes truly extraordinary, and it is astonishing to see women walk with so much facility who present such a degree of motion at the symphysis pubis.

4. That there is neither motion nor relaxation in women who are not pregnant—even where there exists a disease of the uterus or ovary. In a girl aged 17, suspected to be pregnant, but affected with ovarian dropsy, and another aged 14, having a solid ovarian tumor, there was no relaxation or movement of these articulations ; and in a woman aged 45, who had enor-

¹ Recherches Physiologiques et Cliniques sur les Accouchements. Par le Dr. P. Budin, Ancien Interne des Hôpitaux et de la Maternité. Paris, 1876, pages 2, 3, 4.

mous fibrous tumors of the uterus, there was likewise no motion.

We find by these investigations that there is a certain class of pregnant women who have very little or no relaxation of the pelvic articulations, and we have already seen that most cases of eclampsia occur in primiparæ (especially in those pregnant for the first time when advanced in years) and in twin pregnancies; we may therefore state that undue pressure upon the sympathetic ganglia of nerves, together with irritation of the *dilator* nerves of the vaso-motor system, are the primary causes of the increased tension of the arterial system and œdema of the brain which give rise to the eclampsia.

In reviewing the contents of this paper, I will state the following conclusions:

1. That fibroid tumors exist in the uteri of many women, and may attain considerable size without causing any symptoms indicating their presence.
2. That when they develop during pregnancy, they generally disappear as the uterus undergoes involution.
3. That intra-mural fibroids do not always have capsules—and that some of them have pedicles or bands of attachment to the muscular walls of the uterus in which they are imbedded, and that it is not possible by microscopic examination after removal to tell whether a tumor has been intra-mural or sub-mucous.
4. That in the treatment of fibroid tumors, the uterus should always be maintained in its normal position and the cervical canal kept patulous and a free discharge promoted from the cavity of the uterus, and that ergot should not be administered until these conditions are first established.
5. That where the tumors are large and press upon the surrounding organs, the uterus should be elevated above the pelvic cavity, but the cervical canal should always be kept open.
6. That no surgical attempt should be made to remove intra-mural fibroids or those having sessile attachments, unless for uncontrollable hemorrhage or threatened septicæmia.
7. That eclampsia caused by the presence of these tumors is the result of the irritation of the *dilator* nerves of the vaso-motor system, causing hyperæmia and serosity of the vessels of the brain and spinal cord—that it may be accompanied with

albuminuria, if this irritation is extended to the *dilator* nerves of the kidneys ; but the albuminuria must be considered as one of the *effects* of the irritation causing the eclampsia, but not in itself a cause.

8. That the reason why eclampsia occurs most frequently in primiparæ and in twin pregnancies, may be attributed to the greater amount of irritation which these conditions give rise to ; and besides, in primiparæ, rigidity of the pelvic articulations is no doubt an auxiliary cause.

ON THE SIMULTANEOUS ENTRANCE OF BOTH HEADS OF TWINS INTO THE PELVIS.

BY
DR. REIMANN,
Kiew, Russia.
(With two woodcuts.)

NONE of the older text-books on obstetrics mention the fact that both heads in twin labors may occasionally enter into and occupy the pelvis at the same time, and only a few of the more recent writers on the subject, such as Brann, Hohl, Chailly-Honoré, Meigs, and Joulin, refer to the possibility of such an occurrence. Nevertheless, such cases are not at all rare, for forty-one instances have already been published, and I myself am able to add two more to that number.

Properly speaking, the heads of twins never actually enter the pelvis together, where there would not be room for them, but the neck of one head, which is already in the pelvis, is compressed by the other head as the latter is forced through the superior strait ; in that position the unborn part of the first twin is retained above the pelvic brim, and itself prevents the second head from receding from the cavity of the pelvis. The first child may occupy a vertex or a breech presentation, but the second child is always in a vertex presentation, at least no instance of a similar difficulty has yet occurred in which the inferior extremity of the second child presented, and as the

volume of the buttocks is inconsiderable, such a case is not likely to happen.¹

Of the forty-three cases reported, in thirty-five the first child was in a breech presentation, and only in eight cases did the head of the first child present together with the head of the other child. It is worthy of note, that in none of the first thirty-five cases was the difficulty in question brought about by the artificial extraction of the body of the first child; the head of the second child ordinarily entered the pelvis together with the neck of the first child, and the further expulsion of the latter was interfered with as soon as its shoulders appeared outside of the vulva. Only in three cases (Ferguson, Klingelhöfer, Rintel) was the first child born almost to the umbilicus, when the head of the second child entered the pelvis.

The further course of the labor differed in the majority of the cases; in a few only did the exertions of nature alone suffice to expel the children.

In the case of Clough² the midwife discovered twins, one presenting with the feet, the other with the head. On account of the slow progress of the labor, Clough was summoned. Finding the legs and body of one child born, and both arms delivered, he proceeded to extract the shoulders. Meeting with some obstruction, he examined again, and ascertained that another head had entered the pelvis. Ultimately the unaided uterine contractions expelled both heads, that of the second child first; both children had been dead for some time. The mother recovered.

Ferguson³ reports the case of a woman with a well-formed pelvis, in her second labor. One child was born as far as the umbilicus, where it suddenly became fixed, and its expulsion could not be effected by traction on its body. Finding another head in the pelvis, Ferguson tried to push it up, but without

¹ Three cases of difficult labor are published by Bartscher (Monatsschr. für Geburtsk. u. Frauenkr., Bd. XIV., 1859), Duval (Révue therap. du Midi XII, Juin, 1858), and Bernhard Schultze (Monatsschr. f. Geburtsk. u. Frauenkr., XI, 1858), in which the breeches of the twins presented together; but in all these cases an insignificant degree of manual assistance terminated the labor, and all the children were born alive.

² Clough, Med. and Physical Journal, Vol. XXV.

³ Ferguson, Med. Chir. Trans. London, Vol. XII.

success; indeed, it descended still more. As the first child was living, he did not wish to perforate the head, and concluded to wait. Finally the second child was born spontaneously alive, the first child somewhat later, but with life extinct.

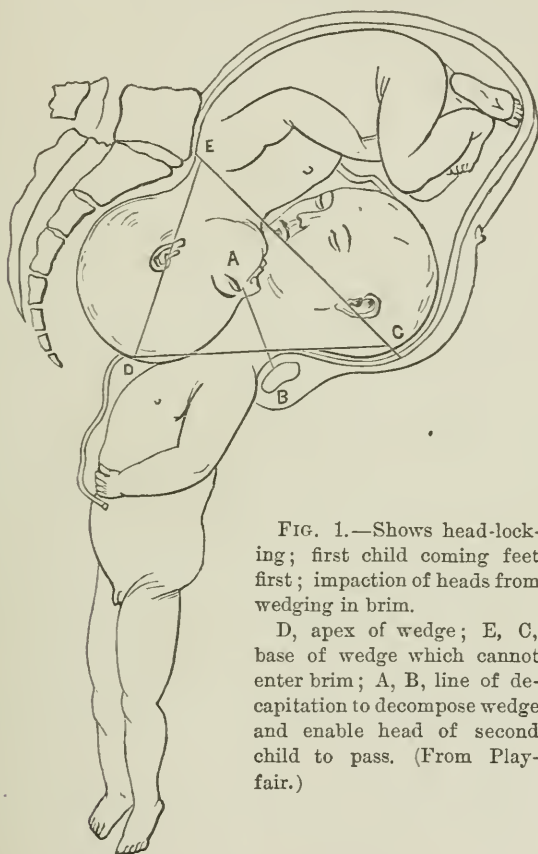


FIG. 1.—Shows head-locking; first child coming feet first; impaction of heads from wedging in brim.

D, apex of wedge; E, C, base of wedge which cannot enter brim; A, B, line of decapitation to decompose wedge and enable head of second child to pass. (From Playfair.)

The labors in the cases of Merriman¹ and Allan² took a similar course; the second child was born first. But in Allan case the first child lost its life; in Merriman's both children were born alive.

The birth terminated in the same manner also in the cases of

¹ Merriman, *Med. and Phys. Jour.*, Vol. XXV.

² Allan, *Med. Chir. Trans.*, Vol. XII.

Fryer,¹ Colhoun,² Simpson,³ Moschner,⁴ and Dugès,⁵ the last of whom made vain efforts to push up the head of the child. In the case of Moschner the spontaneous birth of the twins was facilitated by their small size, they having only advanced to the eighth month of utero-gestation. Kleinwächter⁶ mentions the cases of Raynes⁷ and Woakes,⁸ but without giving particulars, which I have not been able to obtain.

In the remaining cases nature alone proved unequal to the task of completing the labor. Pollock⁹ extracted the two children, whose jaws were locked together, by making strong traction on the presenting buttocks, as is ordinarily done; both children were still-born. Calise¹⁰ succeeded in what Dugès had failed; he pushed the second head above the brim of the pelvis, whereupon the first child was born spontaneously; the second child he turned and extracted.

Sidney¹¹ also pushed up the second head, and extracted the first head with the hand; the second child was born without aid, and both children were alive.

Holderich,¹² having applied the forceps to the first head, but finding it impossible to extract it, drew down the second head with his hand and then the body belonging to it, and finally delivered the head of the first child. The second child was born alive, the first dead.

Many practitioners made use of the forceps. Both children were born alive by those means only in the case of Balfour, and then only in all probability because they were of small size. Their jaws were locked as usual; Balfour applied the forceps to the second child's head, and both children were delivered alive. One child only was born alive by that operation

¹ Fryer, Dublin Med. Trans., Vol. I.

² Colhoun, Med. Record of Original Papers and Intelligence in Medicine and Surgery. Phila., Vol. VIII., April.

³ Simpson, Monatsschr. f. Geburtsk. u. Frauenkrankh. 1862, Bd. XIX.

⁴ Moschner, Conspectus partium, &c., Prægena.

⁵ Dugès, Révue Méd. Française et Étrangère, 1826.

⁶ Kleinwächter, Lehre von den Zwillingen, Prag. 1871.

⁷ Raynes, Obst. Trans., Vol. V.

⁸ Woakes, British Med. Jour., June, 1868.

⁹ Pollock, Obst. Trans., Vol. III., Monatsschr. f. Geb. u. Frauenk., 1862.

¹⁰ Calise, Journal de Médecine, 1771.

¹¹ Sidney, Edinb. Med. Jour., Aug., 1855.

¹² Holderich, Jour. de Malgaigne, 1845, Neue Zeitsch. f. Geburtsk. Bd. IV

in the cases of Rintel, Genth, Carrière, Tellkamp, Walther, and Broers.

Rintel¹ found the child, born as far as the umbilicus and the cord, already pulseless. Before his arrival efforts were made to extract the child, but the presence of the other head in the pelvic cavity prevented their succeeding; Rintel himself, not immediately recognizing the children's position, tried to complete the labor by extracting the body. Finding his endeavors fruitless, he extracted the second head with the forceps, whereupon the body readily followed; the first child was still-born.

In the case of Genth² the mother was a primipara; one child was born all but the head, when the accoucheur arrived; the other head was situated in the hollow of the sacrum, the face turned upwards. Putting two fingers into the first child's mouth, he pushed the head up, then applied the forceps to the second child's head, and extracted it alive.

Carrière³ was called to a woman 20 years of age, a primipara; he found the child, in the morning, in a vertex presentation; in the evening of the same day, however, it was born feet foremost as far as the shoulders. Then the labor ceased, and all efforts at manual delivery proved unavailing. The umbilical cord was pulseless; in the pelvic cavity the head of another child was discovered with face downwards towards the first child's face. The anterior fontanelle was felt in the middle of the pelvic cavity; the posterior fontanelle could not be detected at all. He extracted the second child alive by means of the forceps, and afterwards removed the head of the first child, which was dead.

Walther⁴ made ineffectual efforts to deliver the head of the first child, when the latter had been born as far as the neck, by employing first the so-called Prague method (traction on the neck with one hand over the shoulders and the other holding the feet, forcible traction being first made down, and then upwards, until the face slips over the perineum), next by putting his finger into the child's mouth (Smellie's method), and then by

¹ Rintel, *Monatsschr. f. Geb. u. Frauenkr.*, 1869, Feb.

² Genth, *Neue Zeitschr. f. Geb.* 1848, p. 75.

³ Carrière, *Jour. de Malgaigne*, 1848.

⁴ Walther, *Neue Zeitschr. für. Geb.*, Bd. XVI.

endeavoring to push up the second child's head; finally he applied the forceps, and extracted the second child alive. The first was then easily delivered, but still-born.

In a similar manner, and with similar results, did Tellkamp¹ operate in a case of premature delivery, and Broers² in a labor at term.

Both children were born dead in the cases of Hohl, Braun, Klingelhöfer, and Eichhorn.

Hohl's³ assistant, some hours after the commencement of labor, found a head with the face presenting and a foot. After the rupture of the membranes, the buttocks and one foot presented, but the head could no longer be felt. The body of the child advanced slowly, the arms were delivered, but the head did not follow, and it was found impossible to apply the forceps. Hereupon Hohl himself was called in. He found the umbilical cord pulseless and the child's neck very much elongated by traction. The head stood high in the first oblique (L. O. A.) diameter of the pelvis. He applied the forceps to the second child's head, the first child's body being raised, and delivered it easily. The first head was delivered by the hand. The children were of different sex.

Braun⁴ has given a very accurate description of a case which occurred in his practice. He was called to a seamstress, 19 years of age, immediately after the rupture of the membranes, and found the fundus uteri a hand's breadth lower than the epigastrium, the uterus having a spherical shape. The sounds of the child's heart were distinctly audible high up on the left side. The os uteri was fully dilated, the feet presented and were already in the vagina. From these symptoms Braun concluded that there were twins, and after half-an-hour a child was born as far as the neck; the umbilical cord, however, had ceased pulsating. The shoulders were easily delivered, but the head could not be extracted by Smellie's method. On examination, another head was detected on the left and behind the head of the partially delivered child, the occiput of which second head was turned towards the left side. As the sounds of the foetal

¹ Tellkamp, New York Med. Jour., May, 1867.

² Broers, Nederl. Tijdschrift voor Heel und Verloosk. Nieuwe Serie, 1856.

³ Hohl, Neue Zeitschr. f. Geb., XXXII.

⁴ Braun, Allg. Wiener Med. Zeitg., 1861.

heart were growing faint, Braun ruptured the membranes,¹ and extracted the second child with the forceps. The first head was then expelled by the uterine contractions. The first child was, of course, still-born, and had died during the labor, as was proved by the autopsy; the second child was born asphyxiated, and was resuscitated, but died five hours afterwards. There were two amnia, but only one chorion; several vessels passed from one placenta to the other.

The mother in the case of Klingelhöfer² was a primipara. The child's feet presented, extraction was accomplished as far as the umbilicus, when an obstacle presented itself. Consequently, K. waited until the second head had descended somewhat lower, and then applied the forceps, first to the second head, and then to the first. Both children were dead, the sternum of the first being pressed into the thorax.

Eichhorn,³ not being able to extract the first head in the ordinary manner, applied the forceps to the second head; the first head was expelled spontaneously, together with the second body. Both children were still-born.

Enneaux⁴ as a last resort made use of the forceps; but nothing is known of his case, except that the instrument was applied to the first child's head.

More forcible measures were employed by Irwin, Thurston, Hoffmann, Eton, Perry, Duncan, and Meigs, viz.: the first two operators resorted to craniotomy, the other five separated the child's head from its body.

In the case reported by Irwin⁵ the child was born as far as the umbilicus, when the labor ceased. Irwin found in the pelvis a head with the neck turned to the right sacro-iliac synchondrosis, the face to the left acetabulum. He gave one drachm of ergot without benefit, and then delivered the arms with great difficulty and with the assistance of two other physicians. He was not, however, able to extract the child's body completely, and at last concluded to perforate the second head

¹ This is the only case in which such a difficulty arose before the rupture of the membranes.

² Klingelhöfer, Berlin. kl. Wochenschr., 1873, No. 2.

³ Eichhorn, Med. Corresp. bayer. Aerzte., 1844.

⁴ Enneaux, Jour. de Médecine, 1771.

⁵ Irwin, The Medical Record of Original Papers, Phila., VIII., April. Meissner, Forschungen, &c., Bd. IV.

in order to clear the way. This having been done, and the first head extracted, the second child followed voluntarily. The first child was born alive (?).

Thurston¹ found a similar difficulty, although the fœtus was but seven months old. Having tried without success to push up the second head, he perforated; notwithstanding, the extraction was still exceedingly difficult.

Hoffmann² found the first child born to the neck, but already dead. The neck was so firmly impacted by the other head that motion was impossible. In order to save the second child, he divided the first child's neck, and extracted the other child alive, with forceps. A violent hemorrhage compelled him to extract the detached head at once, which he did by inserting his fingers into the mouth.

In Perry's³ case the child was born as far as the arms when he arrived. He delivered the arms, but tried in vain to extract the head. Nor was he more successful in his attempt to push up the second head, which presented lower than the first. Finally he detached the first child's body from its neck; the second child was born spontaneously, the separated head being expelled at the same moment as the thorax of the second child. The twins were girls, and weighed only $4\frac{3}{4}$ pounds each.

Very similar was the course of the labor in the cases of Eton⁴ and Meigs,⁵ who also decapitated the first child.

In Duncan's⁶ case both children were still-born. Although he also decapitated the child, he was nevertheless obliged to extract the two heads artificially, the first by the crotchet, the second by the forceps. The mother made a good recovery.

Still more unfortunate, than in the cases where the first child's nates presented, was the issue in the cases of *double vertex presentation*.

Properly speaking, the cases of Hohl⁷ and Derlitz⁸ likewise

¹ Thurston, British Med. Jour., 1867, 12.

² Hoffmann, Casper's Wochenschr., 1844.

³ Perry, Brit. Med. Jour., 1869, p. 588.

⁴ Eton, London Med. Gaz., 1846.

⁵ Meigs, The Science and Art of Obstetrics, Phila., 1849.

⁶ Edinb. Med. Jour., Aug. 1855. Monatsschr. f. Geb. u. Frauenkr., Bd. VII., 1856.

⁷ Hohl, l. c.

⁸ Derlitz, Sanitätsbericht für die Provinz Brandenburg, 1835.

belong in this category. They found two heads presenting simultaneously at the superior strait, one of which, however, voluntarily made room for the other during the progress of the labor.

Of those cases in which an actual difficulty occurred, Lespinasse's¹ case was the only one in which the efforts of nature alone sufficed to complete the labor. The second head was firmly pressed against the neck of the first-born head; but notwithstanding this serious obstacle, after a delay of three hours, the partly delivered child was born first, and then the other.

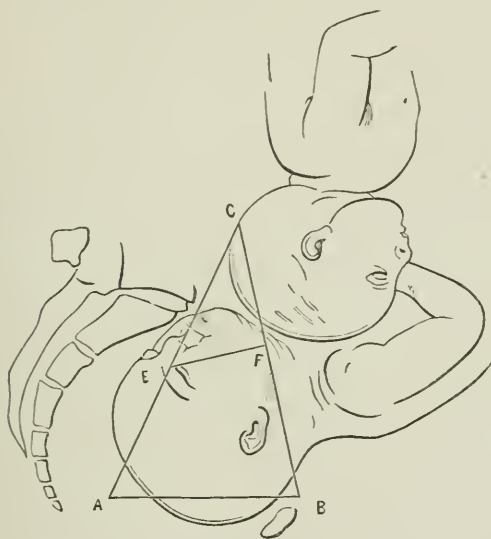


FIG. 2.—Shows head-locking, both children presenting head first.
(From Playfair.)

Very interesting is a case of triplets related by Chailly-Honoré.² One of the small heads entered the pelvis in a second (R O A) vertex presentation, the other was stopped at the superior strait between the head and the shoulders of the first child. Delivery ceased, but was completed by pushing up the second head and administering ergot. These first two children had one chorion together; the third child possessed

¹ Lespinasse, *Nederland. Tijdschr. voor Heel und Verloosk. Nieuwe Serie*, 1856.

² Chailly-Honoré, *Bulletin de Thérapie*. Août, 1842.

ts own separate membranes, and was born independently after the other two.

In a similar manner, but with less good fortune, terminated the labor in the case of Duhamel.¹ The mother was in her third confinement; although the pains exerted but little influence on the presenting part, the head was delivered; but the labor then ceased. Examining again, Duhamel detected a second head in the pelvis. He pushed up this second head notwithstanding the increasing pains, put a crotchet into the axilla of the first child, and extracted it. It was still-born and had a fractured humerus. The other twin, much smaller than the first, was delivered without artificial aid ten minutes later, in an asphyxiated state and with a flattened head.

The forceps were applied in two cases by Franqué and by myself. The particulars of the latter case are as follows:

A Jewess, 16 years of age, of strong constitution, a primipara, was attacked with convulsions when the os uteri was already completely dilated and the liquor amnii had been discharged. The accoucheur, who had been called in, applied the forceps to the presenting head and extracted it; but he was not able to proceed further with the delivery of the child, and on examination found another head in the pelvis. Being called in, I found my colleague preparing to divide the neck of the child, which was already dead, the pulsation of the heart of the other child having likewise ceased to be audible. The neck of the head already born was turned slightly towards the left side of the symphysis pubis and forcibly elongated; the occiput of the other head was turned upwards towards the right. The mother was in a high state of excitement and very much prostrated. I applied the forceps to the second head, and delivered it with great ease. Then both the bodies were extracted, that of the first child being born first. Both children were males and of medium size, and both still-born; they had separate membranes. The mother died on the fifth day, of peritonitis.

Franqué² followed the same course. One head was delivered, but the other head, being tightly squeezed against the neck of the first child, impeded the further delivery. Franqué applied the forceps to the second head. Both children were still-born.

Craniotomy was employed by Alexander,³ who could effectuate delivery only after having perforated both heads.

¹ Duhamel, *Gazette des Hôpitaux*, 51, 1853.

² Franqué, *Monatsschr. f. Geb. u. Fr.*, Bd. XX., 1862.

³ Alexander, *Edinb. Med. and Surg. Jour.*, 1822.

Jarnatowsky,¹ in Posen, had recourse to the separation of the first child's head. He was called to a hamlet, six miles from town, at four o'clock in the afternoon, and found an unmarried woman, 22 years of age, of not very strong physique, in her first confinement. The pains had begun in the night, were strong in the beginning but irregular, and had diminished afterwards; the labor had not advanced during the last four hours. Between the thighs of the mother there was found a child's head quite immovable, which the accoucheur vainly endeavored to push back or to draw out. The finger, passed up to the child's neck, met a second head pressed firmly against the first child's neck; the physician was no more able to push back the second head than the first. Seeing that the first child had already ceased to live, the accoucheur determined to detach its head in order to gain more room for the extraction of the other child. Not having the proper instrument with him, he divided the neck with a simple scalpel, and, observing that the corpse became somewhat more movable, he pushed it back into the uterus as far as possible, applied the forceps to the second head, and with a few strong tractions delivered a dead child. He then introduced his hand, passed one finger into the axilla of the remaining child, drew its body down into the vagina, and delivered it with the assistance of the uterine contractions. The children were well formed and fully developed. The placenta was single, but the membranes were double. The mother recovered, with the exception of a vesico-vaginal fistula of the size of a shilling, and died a year later of some other disease.

Finally, Hohl² mentions a case of double vertex presentation, which came to the notice of Lewin, but does not state where the particulars may be found.

The foregoing review shows that the form of dystocia under discussion is one of the most dangerous accidents as regards the life of the child, which can be met with in the course of twin births. Indeed, the proportion of dead children to those born alive, in the cases above mentioned, is as follows:

I. *Both children in vertex presentations.* 8 cases—16 children. (The third child in the case of Chailly-Honoré is not

¹ Communicated by letter.

² Hohl, loco citato.

counted.) Of 4 children the fate is unknown. Remain, 12 children; of these

6	children,	first	born,	5	were	still-born,	1	living=16%	living.
6	"	last	"	4	"	"	2	"=33%	"

12	children.	9	still-born,	3	living=25%	living.
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II. *One child in vertex, the other in breech presentation.* 35 cases—70 children. Of 15 children the fate is unknown. Remain, 55 children; of these

26	children,	first	born,	23	were	still-born,	3	living=11%	living.
29	"	last	"	10	"	"	19	"=65%	"

55	children.	33	still-born,	22	living=40%	living.
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III. *Total.*

32	children,	first	born,	28	still-born,	4	living=12%	living.
35	"	last	"	14	"	21	"=60%	"

67	children.	42	still-born,	25	living=37%	living.
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But, if we consider, first, that, properly speaking, the case of Chailly-Honoré ought to be excluded; second, that in the case of Balfour the twins were of small size; third, that the history of Irwin's case appears rather doubtful, because it is very improbable that the first child did not lose its life during all the foregoing manipulations; fourth, that in the cases of Colhoun, Fryer, Dugès, Allan, in which mention is made only of the fate of the second twin, probably the first child was still-born—the proportion of living children becomes still smaller, and ought really not to be estimated higher than 30%, and the proportion of first-born living children 5%.¹

Besides, many children probably die soon after birth, in consequence of the injuries sustained during labor.

This large proportion of still-born children is not surprising. Even when both children are in vertex presentations, the child whose head first enters the pelvis is in great danger, because not only is its neck squeezed by the head of the second child, thereby producing cerebral hyperæmia, but its umbilical cord is exceedingly liable to be compressed by the body of the second child. Indeed, all the first children were still-born in the cases

¹ Braun collected 13 cases, in which the first child presented by the breech; of these 36 children, only 3=11% were born alive.

above mentioned, with the only exception of the peculiar case reported by Chailly-Honoré. Even of the second children, two-thirds lost their lives.

No more fortunate is the first child, when it presents with the breech, for, in consequence of compression of the cord, the child usually succumbs before its delivery can be accomplished.

Frequently (in more than one-third of the cases reported) the second child also loses its life, either through compression of its neck by the first head, or in consequence of the necessary operations. As a rule, the mother does not run any risks, unless under peculiar circumstances, as in my case.

Therefore, when a portion of the child is already born and the progress of the labor is suddenly arrested, without any apparent reason, we should always bear in mind the accident known as the locking of the heads of twins, especially as only in the cases reported by Braunn and Clough was the existence of twins suspected. An examination, if necessary with the whole hand, will always explain the situation.

The reason why such a difficulty happens more frequently in breech presentation of the first child (in our cases four times as often) is to be found in the difference in size of the head and trunk. In breech presentations the first child's head prevents the head of the second child, when once it has advanced into the pelvis, from retreating; but in vertex presentations the smaller trunk more readily permits the retreat of the second head from the pelvic cavity. Besides, when the twins turn their faces towards each other, as happened in the majority of the cases reported, the chin of one child easily becomes locked with the chin of the other, and consequently during extraction the first child draws the other after it and forcibly retains it in that position.

Only two conditions are recognized as exerting a favorable influence on the production of this accident, viz., in vertex presentations a large pelvis which permits the head of the second child to enter its cavity together with the neck of the first child, and in breech presentation of the first child the position of the heads with the faces turned towards each other, whereby the interlocking of the chins is facilitated. The artificial extraction of the first foetus does not occasion the difficulty referred to, for only in one of the cases reported was that operation per-

formed. Worthy of mention is the proportion of primiparæ and multiparæ, there having been twice as many of the former as of the latter.

This accident can neither be foreseen nor prevented, with the single exception of the case in which the twins are alternately felt at the pelvic brim, the one in a vertex, the other in a breech presentation, as happened in the case reported by Clough. Under such circumstances it is advisable to rupture the membranes of the child presenting with the vertex, in order to prevent the child in breech presentation from entering the pelvis first, for in that case the locking of the chins would be likely to occur.

If, however, an examination reveals the fact that the twins have already effected a simultaneous entrance into the pelvis, the most efficacious measures should be resorted to without delay, and it would be injudicious to rely upon the assistance of nature alone, which ordinarily proves insufficient, as has already been shown.

Of all the measures used for the purpose of precipitating labor, the least useful for these cases is ergot—indeed all remedies which increase uterine contractions. They cannot remove the mechanical impediment, and may readily increase the danger to the mother, by inducing forcible irregular contractions of the uterus. Thus Walther and Irwin employed ergot with no benefit whatever. A mechanical difficulty of such a character can be removed only by mechanical means, and the only safe and rational measure is to *deliver the second child before the first*. This was the course of labor in the cases terminated by nature's efforts alone, and in the same manner twins joined together are spontaneously delivered; the labors in which latter class of cases in many respects resemble those described in this paper.¹

Indeed, when the first twin presents by the breech, he forms, so to speak, a cone with the base above; the other child, on the contrary, represents a cone with the base below; therefore it is evident that it is easier to extract first the last mentioned cone, the second child. Even when both twins are in a vertex presentation, the same rule is to be followed.

¹ Hohl, Von der Geburt todter, missgestalteter, u. s. w., Kinder, Halle.

The forceps should, therefore, be applied without delay to the second head; every other measure is unsuitable and useless.

The first head can be delivered neither by the forceps¹ nor by traction on the body already born, because it is retained by the second head. It is true that Enneaux succeeded by applying the forceps to the first head, and Pollock by drawing on the body already born; but those were merely lucky chances, and the result of Pollock's proceeding is not likely to encourage imitation. Ordinarily such attempts proved not only unsuccessful, as for instance in the cases of Eichhorn, Rintel, Irwin, Perry, and others, but also served to increase the difficulties of the succeeding operation and to aggravate the already unfavorable prognosis.

To push up the second head in order to effect the delivery of the first is not more practicable, because the first head (or body) blocks up the way. Such an attempt did not succeed in the cases of Dugès, Walther, Thurston, Perry, and others; the reasons why Calise, Sidney, and Duhamel were more fortunate are probably to be sought for in specially favorable circumstances. The issue of the labor in Duhamel's case, at all events, will scarcely induce accoucheurs to follow his example, notwithstanding the advice of Dionis.² Besides, such an attempt to push up the second head is likely to occasion rupture of the uterus.

The perforation of the first head is very difficult, in consequence of its high situation, and because the other head takes up so much space; besides, it does not remove the obstacle, for even the diminished head cannot pass by the other head. Therefore, if it is found impossible to extract the second head by forceps, it is better to perforate the same head (the second), and extract it with the cephalotribe, if the child be already dead, of course. By operating in this manner, Irwin and Thurston met with success.

In conclusion, some accoucheurs, such as Hoffmann, Eton, Perry, Meigs, Duncan, Jarnatowsky, decapitated the first

¹ The advice of Joulin (*Traité complet des accouchements*, Paris), to apply the forceps to the head most easily attainable, is entirely wrong; and still more so that of Kleinwächter (*Lehre von den Zwillingen*, Prag, 1871), to act differently, according to circumstances.

² Dionis, *Traité général des accouchements*, Liège, 1724.

child ; but that proceeding is also unsuitable, because the part of the child already expelled does not hinder the progress of the labor, and the part remaining in the uterus will be in the way of the other child, in spite of the decapitation. Of what use would decapitation have been, for instance, in my case? And how difficult was it for Jarnatowsky to finish the delivery after he had separated the head of the first child from its body! Moreover, to divide the neck is no easy task under such circumstances, and a mutilation of the child's body should always be looked upon as a barbarous proceeding, and avoided accordingly, if possible. Finally, the mother has still to endure the extraction of the separated head (or body) afterwards, sometimes a very difficult operation, and in any case prejudicial to the health of the mother, already weakened by the tedious labor and the attempts at delivery. Only in case the application of the forceps to the second head proved unsuccessful, and there were distinct signs of the second child's life, would I decide to decapitate the first child. If in such a case, notwithstanding the decapitation of the first child, it is found impossible to finish the labor, and the condition of the mother grows dangerous, I should not hesitate to perforate the head of the second child without waiting for its death, in order to save the life of the mother.

KIEW, May, 1876.

PNEUMATIC PRESSURE AND THE GENU-PECTORAL POSTURE IN THE REDUCTION OF UTERINE LUXATIONS.

A REPLY TO DR. DOUGHTY'S "INTERROGATORY."¹

BY

A. SIBLEY CAMPBELL, M.D.,

Augusta, Georgia.

(With five woodcuts.)

In the October number of the AMERICAN JOURNAL OF OBSTETRICS an article appeared, which was chiefly occupied in review-

¹ See article (October No., p. 561) by Wm. H. Doughty, M.D., Augusta, Ga.

ing the opinions of Prof. Henry F. Campbell on this subject; and which at the same time failed to present fairly his teachings, either as to the action of forces, or the applications of the method in practice.

As a wrong impression may have been inadvertently conveyed to the readers of the JOURNAL—by means of detached and fragmentary quotations, and by giving undue prominence to the expression of some of his opinions, while other qualifying clauses, no less important, were forgotten or disregarded—being familiar with the views of Prof. Campbell, and knowing by my own experience the great value of this method of treatment, I shall in the following discussion briefly refer to his already published paper,¹ and consider also the validity of Dr. Doughty's adverse arguments.

In "the interrogatory" contained in the very title of this review there is a manifest error in the use of terms. Referring to the action of atmospheric pressure, the question is asked: "Is it the real factor, or simply an auxiliary?" No such language as this is known to mathematics or mechanics; every quantity, every force, power, condition, if you will, which assists in producing a given result, is a factor—a real factor, whether its numerical value be estimated at one or a million, unity or infinity; and where several forces conjointly act to produce their common result, there is no one that can alone be called *the* real factor.

The writer has given us what seems intended as a philosophical disquisition upon the process, speaks of factors, and employs a diagrammatic representation of forces. Hence, I shall hold him to the sphere of argument selected, and admit no hybrid terms.

We shall see hereafter, by the language of the reviewer himself, whether or not pneumatic pressure is a "real factor."

After reading the review, one might be led to suppose that the author had been the first to call attention to the potent action of gravity, and that Dr. Campbell had not given full credit to its influence. Indeed, by some strange oversight in

¹ Résumé of a Report on Position, Pneumatic Pressure, and Mechanical Appliance in Uterine Displacements. By Henry Fraser Campbell, M.D., Augusta, Ga. 1875.

the opening paragraph, in quoting from the paper of Dr. Campbell, it is declared, "now it [the posture] is subordinated to the mere 'utilization of *air-pressure* as the instrumentality to effect uterine replacement.'" In the publication of Dr. Campbell, when speaking of the neglect into which this method had heretofore fallen, the sentence reads thus: "I am not aware of a single instance in which distinct mention is made of the genu-pectoral posture being applied for its true object, the utilization of *air-pressure* as the instrumentality to effect uterine replacement, by gravity." The quotation in the review stopped short of the two little words, BY GRAVITY, although they were all that remained to complete the period; and gravity was to have so important a place in the discussion which was just being entered upon—was to be brought prominently forward, as par excellence the "potent factor"!

So important did Dr. Campbell regard the influence of gravity, that in giving a familiar, easy, and approximate illustration of the process by the reversed pneumatic syringe, he rep-

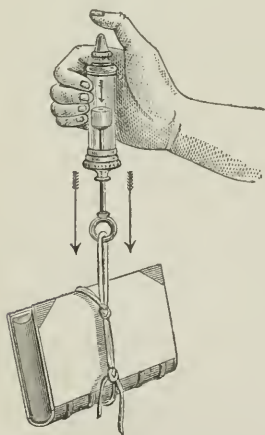


FIG. 1.—Reversed pneumatic pump.

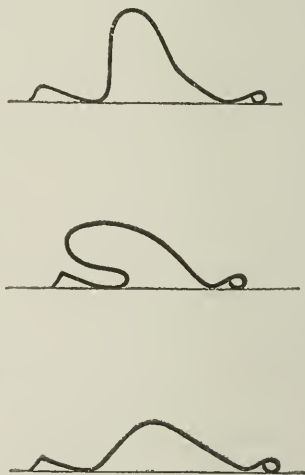


FIG. 2.—Outline of the true posture and variations from it.

resented gravity or the weight, in his diagram (Fig. 1), by a large volume attached to the handle; and to be more explicit, I introduce this and the other cuts from his pamphlet, the subject of the review.

Without comment, I give other quotations from Dr. Campbell, in which gravity is emphatically mentioned in various connections.

In describing accurately the genu-pectoral posture, he gives the accompanying outlines, indicating that of the true posture and two of the improper variations from it (Fig. 2). The first, he says, "represents the most complete reversal of the bearing of GRAVITY that the human body can practicably be made to effect upon the same plane. The second figure scarcely requires particular description, as the manner in which the reversal of GRAVITY must fail is sufficiently obvious. The last is to indicate an outline of the body which, though entirely different from the other, is still equally unfavorable to the reversal of GRAVITY in a way that would promote uterine replacement by equilibrium of pressure."¹ Again, in regard to rectal inflation, he says it may serve in certain cases to "dislodge the fundus from the hollow of the sacrum, thereby making restitution by vaginal inflation and inverted GRAVITY easier and more certain." In referring to the rationale of the process of reduction, he says: "Inverted GRAVITY is undoubtedly the force *principally* acting, but it is kept in the most powerless abeyance, until downward pressure, through the vulva, is supplied, 'to restore the equilibrium,' as the physicists would perhaps express the process." And in speaking of the terms in use, which might lead to errors in the use of the posture, he says: "'Knee-elbow position,' 'quadrupedal posture,' and especially the term 'all-fours,' are names which fail to describe, accurately, knee-and-breast posture. They do *not* indicate a position of the body in which the GRAVITY² of the organs becomes inverted."

So much for gravity.

Although the author of the review has been "long familiar with the knee-chest posture," and though "early taught the requisites for its skilful performance," we might be led to suppose that this familiarity had given but little satisfaction in the past, and that the value of these early lessons had just now begun to be doubted; when on the next page he speaks so dis-

¹ "She must not pitch forwards and make the pelvian angle obtuse, nor draw the knees up under the body, making it more acute," etc. Sims: Uterine Surgery, pp. 13, 14.

² The capitals are mine.

paragingly of its superior advantages, in connection with his mention of the knee-elbow and other postures, which are very good, it is true, as far as they go. Indeed, the many failures which he informs us he has experienced in the attempt to replace retroversions after raising the perineum, may be due to this very fact, that he does not fully appreciate and avail himself of the greater power which may be evoked by the *genu-pectoral* posture.

On the first page of the review it is stated, "*we have so often reduced* this class of displacements, with and without careful regard to the admission of air into the vagina," etc.; and, on the very next page, "*we have so often* in retroversions raised the perineum with two fingers, with a free admission of air into the vagina, *without witnessing this magical replacement,*"¹ etc. Such experience with pneumatic pressure in the *genu-pectoral* posture seems, by these several statements, to have been characterized by very abrupt and rapid oscillations, the barometric index—in this instance of applied *aërostatics*—changing in degree and kind with as little premonition as the variable mercury on an unsettled day. Furthermore, any one is certainly in error who for a moment supposes that the advocates of this method of treatment regard it as characterized by "universal and uniform success;" if such were the case, it would differ from every other agent, instrumentality, or device known in medicine.

Like nearly the entire article, the third paragraph of the criticism contains within its own limits all that is needed for its complete refutation. "Reduction often made in this position," it is argued, "with total neglect of this special condition, is proof that it is not indispensable, *unless*¹ it be held that it has been unconsciously used by operators who have failed to recognize its presence and merits."

Now, what is the inference to be drawn from this? It evidently is, that if "it be held" by competent authority, that air-pressure "has been unconsciously used," the frequent reductions thus made are no longer proof that air-pressure is not indispensable; but tend rather to prove that this factor *is* a *sine qua non* in the process. Our authority that air *has* been unwittingly used is conveniently furnished for us in the next

¹ The italics are mine.

sentence, when it is affirmed, "we believe it true . . . that the introduction of more or less air *does* take place—*indeed, could hardly be avoided.*"¹ *Ergo*, the very opposite has been substantiated to that which the writer started out to prove.

Nor from the foregoing does it logically follow that "for that reason the immediate, spontaneous rectification of the uterus ought to have been so *constantly*¹ observed." For such instantaneous and unfailing success is claimed neither for this method nor for any other human device; and "the notable instances now made public," though they may give rise to a proper admiration for this "beautiful" reduction in the mind of every sincere seeker of truth; and place upon a lasting basis the process by which it is accomplished; yet to others who have been "long familiar" with this "very ready method" of reduction, these successes have themselves for some time been no longer "objects of wonder and puzzling contemplation."

Passing over minor points, let us now take up what is evidently considered the climax of the argument—the point at which a cumulative effect has been produced—where the weight of logic, becoming more and more powerful, is just about to descend like an avalanche, carrying all resistance before it. "Observe that it is the posture," says the reviewer, "that has disturbed the equilibrium, the restoration of which demands the admission of air, not as the *factor* in the replacement, but for the one purpose of neutralizing the intra-abdominal pressure, and thereby leave the gravitation of the pelvic viscera to contend without restriction with the ordinary resistance to their return." Mark the language used—the admission of air is now demanded in order to restore the equilibrium, and leave the gravitation of the viscera to contend, etc.; and yet this condition, this power, this force, which is so important as to be "demanded," is not a factor in the replacement—that force which it is declared, has a "purpose" to perform; which must itself loosen the shackles of gravity, that it, "the potent factor," may act.

The expression "*the factor*" is constantly used; the elementary principle already alluded to, apparently not being understood, that where an effect is obtained, a result produced, by the consentaneous action of several causes, agencies, or

¹ The italics are mine.

forces, they are each termed *factors*, no matter what the comparative power of each individual factor may be.

"In invoking gravity for the relief of retroversions," continues our author, "in the knee-chest or elbow posture, the entrance of air into the vagina, except in minor degrees of displacement, becomes necessary in order to relieve a necessity created by the posture itself." Alas for the meaning of language! An agency which is so indispensable, so potent, as to be demanded in the chain of events that brings about the end; which "becomes necessary in order to relieve a necessity;" we are requested to "observe"—lest we should logically observe something very different—is not a factor in that result, for the accomplishment of which, it "becomes necessary to relieve a necessity"!

The truth has become so potent as to struggle forth in the emphasis of this awkward tautology; although the reasoner himself fails to see its force, to prove the error of his conclusion. "Created," it is added, "by the posture itself." No matter just now *how* the necessity is created, so far as the importance of the air-pressure is concerned to relieve the necessity. I am not

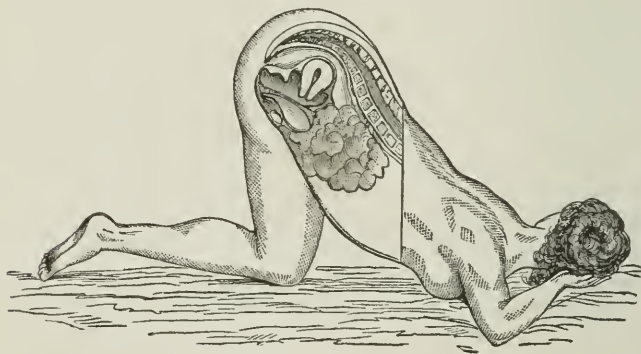


FIG. 3.—Retroversion in the genu-pectoral posture.

the champion of any one particular factor, denying the potency of any of the others—for air-pressure versus gravity as evoked by the posture, or vice versa. The question is, by what *means* is this so-called necessity relieved, that the process may be completed, and the uterus restored. This the reviewer himself tells us is accomplished by "the admission of air."

"Seeing then its function is limited to this particular duty,"

continues our critic, "it cannot be considered the real factor." As it confessedly has a "function," a "particular duty," it is declared by implication in these very terms, that it is one of the factors; and (of course) a real factor, if the English language has any meaning.

Further, "it becomes an antecedent to the forcible employment of gravity alone in fortunate cases." If this means anything, it implies that in the varieties of uterine displacements easily reduced, air on its admission *first* exerts its influence; which is then followed by, and renders possible, not only the employment of gravity, but its forcible employment; and that this is sufficient alone to accomplish the reduction. What greater tribute to the potency of pneumatic pressure could its most earnest advocates desire!

"And to gravity supplemented by direct manual or instrumental means in those less so." Have the rules of logic no longer any force? Are premises no longer the guides to conclusions? Shall a force so important that it is dignified with the distinction that it becomes an antecedent—acting first in the order of time—not only to gravity, but to its forcible employment in cases easily reducible, and which in the more difficult, too, acts as an antecedent to gravity assisted by other means; which is demanded to restore the equilibrium; which thus neutralizes the intra-abdominal pressure, leaving the gravitation of the pelvic viscera to contend without restriction, etc., etc.; shall all this, I say, be predicated as the function of a force, to dismiss it in the next breath with the contemptuous, peculiar, and—in this connection—certainly original expression, "it is at most an auxiliary"!

Finally, it is triumphantly stated that "*complete vaginal distention—that balloon-like inflation—becomes only possible, after or simultaneously with (not before) reduction, and is in no wise the cause of the replacement.*" I regret that the reviewer has done his argument so much injustice as to forget that in many well-known processes causes and their effects are often simultaneous. It is not important for my argument at what exact moment of time complete distention is accomplished; nor has this been the topic at issue. As the hackneyed fallacy of *post hoc propter hoc* has been significantly alluded to, I am here reminded with much greater propriety of the fallacy, no

less familiar, termed *ignoratio elenchi*. What I am establishing is—and by the reviewer's own premises—that pneumatic pressure is an important factor in the reduction; whether it begins to exert its power at the moment of time when it is first admitted, or at the moment when distention is completed, or whether it acts continuously in the interval between these limits. The fact is that in cases amenable to this method the process of reduction of the displacement and that of distention of the vagina proceed *pari passu* with each other—the air-pressure is acting all the time—and complete distention and complete reduction are at one and the same time accomplished.¹

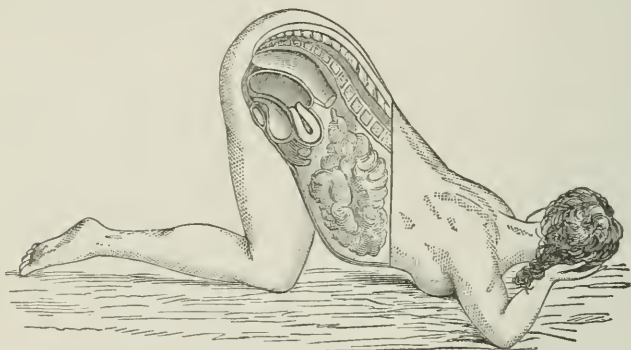


FIG. 4.—Reduction by pneumatic pressure and the genu-pectoral posture.

Nor does all this at all effect the claims as to the potency of air-pressure *per se* as a factor in the reduction; nor does this infinitesimally short period of time that may intervene between the entrance of air and the complete distention of the vagina make any difference; for the reviewer himself tells us that in favorable cases “the uterus rectifies itself almost instantly upon the admission of air.”

In admitting that “the pneumatic pump affords a very good illustration of the mechanism here given,” a very good illustra-

¹ “Thus we obtain, in this case, a solution of the difficulty which is placed before us. The instantaneous effect or change is simultaneous with the instantaneous force or cause by which it is produced. . . . There is a progressive cause and a progressive effect which go on together and occupy the same finite time; and this simultaneous progression is composed of all the simultaneous instantaneous steps of cause and effect. The aggregate cause is the sum of the progression of causes; the final effect is the last term of the progression of effects.”—Whewell: *History of Scientific Ideas*.

tion is also afforded us of the fallacy of the argument above quoted. For to offer as an argument that this alien, "complete vaginal distention" . . . "becomes only possible after or simultaneously with, not before, reduction, and is in no wise the cause of the replacement," in order to prove that the air-pressure *per se* is not a powerful factor, is as illogical and meaningless as to say that the atmospheric pressure does not act as a factor—an important factor, the determining factor—in causing the descent of the piston of the reversed pneumatic pump (Fig. 1), *because* the barrel of the pump above it does not become *completely* filled with air *until after* or at the instant that the piston has descended! The statement, though absurd, would be exactly parallel and of equal force.

I have thus briefly shown that a force—which is "demanded" in a process; which has "a purpose" to accomplish; which "neutralizes" an opposing force; which "becomes necessary to relieve a necessity"; which has a "function," a "particular duty" to perform; which "becomes an antecedent" to the forcible action of "the potent factor"; which "equilibrates" other contending forces; upon whose action, in appropriate cases, the result is "almost instantly" accomplished—through whatever medium or instrumentality it is supplied, can be—by the simple

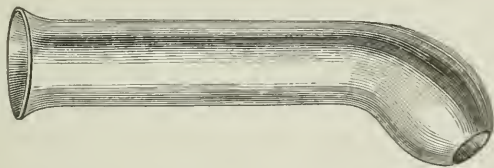


FIG. 5.—Campbell's pneumatic repositor.

significance of language and at the tribunal of common sense—no other than a most important and indispensable factor.

Consequently, "these views" of the interrogator, if he thereby means his conclusions, cannot be maintained as logical sequences to his own premises; and the glass air-way—the simple device for self-treatment, under certain conditions, through which this factor may be conveniently employed—is in every "proper sense," and to all intents and purposes, a uterine repositor.

As to the question of self-replacement, it is scarcely necessary to state that its *objects*¹ have apparently been misunderstood

¹ See Abstract of Proceedings of American Gynecological Society, Am. Jour. Obstetrics, Oct., 1876, pp. 584-5; and for Prof. H. F. Campbell's views

by the writer of the adverse review. As to the validity of *its claims* as a method to be employed under the circumstances for which it is recommended, *this follows as a direct and necessary corollary upon the already well-established claims of pneumatic pressure and the genu-pectoral posture.*

In his valuable and comprehensive "Report¹ on the Progress of Gynecology during the year 1875," Dr. Paul F. Mundé gives as one of the four advances "the growing appreciation of the influence of posture on the health of the female sex, and the recognition of the value of posture, especially if aided by pneumatic pressure, in the treatment of uterine displacements." In his paper on the "Reposition of Retro-displacement of the Gravid Uterus by Posture and Atmospheric Pressure," Dr. Mundé says, "these doubts as to the power of air-pressure in the vagina certainly confirm the impression I had gathered touching the ignorance or want of appreciation of the profession of this simple, but nevertheless powerful instrumentality;" and again, "I do not hesitate to express my unqualified support of the principles of treatment advocated by Dr. Campbell; and my belief that its universal appreciation and adoption will be of great benefit to the suffering female sex."²

In the discussion of Dr. Campbell's paper, presented to the American Gynecological Society at its late meeting in September, "Dr. Emmet spoke favorably of the method, and regarded the glass tube as an important acquisition in carrying it out."³

The endorsement of pneumatic pressure and the genu-pectoral posture, in their varied applications, by other prominent writers and practitioners⁴ in America, England, and Germany,

at length on this subject, see Volume of the Society's Transactions at the First Annual Meeting in New York, in September, 1876.

¹ Am. Jour. Obstetrics, April, 1876, p. 173.

² Am. Jour. Obstetrics, June, 1876, pp. 297, 300.

³ Am Jour. Obst., Oct., 1876, p. 684.

⁴ See Abstract of Proceedings British Med. Association: Influence of Posture in the Treatment of Uterine Disorders, by Arthur W. Edis, M.D., Obst. Jour. Gr. B. & I., Oct., 1876, p. 463. Dr. Solger, Berlin: *Beiträge zur Geburtshülfe und Gynäkologie*, Vol. IV., No. 1, quoted by Dr. Mundé (*loc. cit.*). See views of Dr. Robert Battey, Atlanta Med. & Surg. Journal, June, 1875, pp. 135-6; *ibid.*, July, 1875, p. 231; Dr. T. S. Hopkins, *ibid.*, Nov., 1875, pp. 449-452. Transactions Medical Association of Georgia, Dr. W. O'Daniel's Report, p. 61. Dr. James D. Trask, Medical Record, May 6, 1876; and Obst. Jour. Gr. Br. and Ir., May, 1876, Am. Sup., p. 22.

renders it scarcely necessary, in a brief paper like the present, to notice in detail the several petty exceptions taken in the review. Though my special object was to consider the open question propounded, I hastily add the following concluding rejoinders:

1. That even after the most skilful reduction and the adjustment of a proper support, self-replacement is often by no means "a superfluity;" for the uterus will frequently settle down upon or in spite of the pessary, or return in some degree to its former obliquity. Self-replacement in many instances will correct this condition, supplementing the action of the instrument and enabling it to be borne.

2. That though the patulous condition of the vaginal strait will in some cases cause the entrance of air on the assumption of the posture alone, this does not impair the principle upon which the use of the pneumatic repositor is based; and in many cases of a different conformation, it will prove a valuable convenience to insure a free and certain ingress of air.

3. That while the advocates of this method would by no means banish other valuable positions and methods of replacement, the genu-pectoral posture when employed in diagnosis does not "deny" such "useful knowledge" as the degree of contractility of the vagina and its relations with the uterus. On the contrary, it sometimes has this advantage. The examining finger introduced and excluding the air, until the os, vaginal walls, and cul-de-sac have been sufficiently explored, may then elevate the perineum, following the receding uterus after the admission of air, and thus derive additional knowledge as to "the extent and direction of motion possible to the dislocated organ."

4. That in "*fitting*" the pessary, after such information has been obtained, it is not to be supposed that the intelligent gynecologist will be led astray merely by the subsequent distention of the vagina; for he already knows that no matter how great the expansibility may be, it is especially desirable, in all cases, that the lateral walls should be distended as little as possible by the support; so that it may enable the vagina to regain, and not still further decrease, its already diminished tonicity.

5. That it has well been added, in regard to the *introduction* of pessaries, that "after the reduction of the displace-

ment" they may be as painlessly introduced on the back. But in no other than one of the knee postures (and best, of course, the knee-*breast*), can the previous *reduction* be made so easily, fully, and painlessly. Bimanual palpation is undoubtedly to be made, when necessary, in its appropriate position; and before the introduction of the support. Complete reduction may then be made in the knee-breast posture, a change to which is the part of wisdom, not "folly," if a more perfect restoration of the uterus and superincumbent viscera to their normal relations can thereby be obtained, or the patient saved the least degree of pain consequent upon the direct application of manual force in a less potential and subsidiary posture.

6. That the three important factors that may be evoked in the genu-pectoral posture as applied in the reduction of uterine displacements, are: First, the force of gravity; second, the force of pneumatic pressure; and third, the force of the intra-abdominal detraction, variously termed "suction," "draught of the viscera" (Campbell), "suction or traction away from the pelvic organs," "*vis a fronte*" (Mundé), "negative intra-abdominal pressure" (Solger).

7. That self-replacement, when properly understood and employed, is an admirable conception and a most valuable resource.

CLINICAL CASES.

NEW YORK WOMAN'S HOSPITAL.

COMPLICATED VESICO-URETHRO-VAGINAL FISTULA—RESTORATION OF URETHRA—CLOSURE OF FISTULA—CURE.

Reported by JOSEPH D. ANWAY, M.D., late House Surgeon.

Mrs. J. E., aged 33, married; admitted to the Woman's Hospital, service of Dr. T. A. Emmet, Jan. 28, 1875.

History.—The patient states that she has given birth to two children at full term, and has had one miscarriage. The last child was born in October, 1874. The breach presented, and she was forty-eight hours in labor. Eight days after the con-

finement portions of the vagina sloughed, and she has been unable to retain her urine since.

Physical Condition.—Three fistulæ were found to exist: two vesico-vaginal, and one urethro-vaginal.

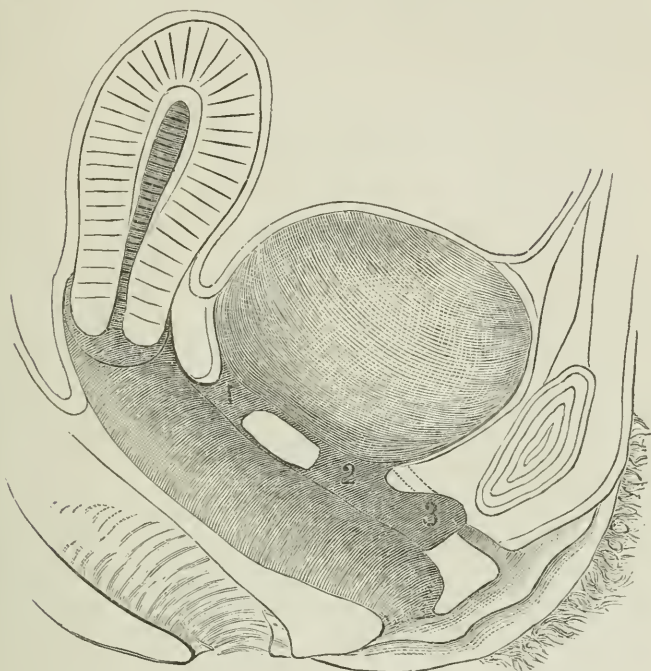


FIG. 1.

Fistula No. 1 was a simple one, nearly in the median line, and having a transverse diameter of one inch.

Fistula No. 2 was just at the neck of the bladder, and measured one inch transversely and three-quarters of an inch antero-posteriorly. It extended up close under the left pubic ramus.

Fistula No. 3 had penetrated beyond the urethra, so that about one-third of it was entirely gone.

The portion of the anterior wall included between 2 and 3 had partially sloughed away, so as to be only half the normal thickness; and that portion of the urethra indicated by the dotted lines was occluded by inflammatory action. The cervix was lacerated on the left side down to the vaginal juncture, and slightly on the right side. The uterus was in

the position of retroversion. The external genitals were very much excoriated by the urine. Considerable phosphatic deposit noticed about edges of the fistulæ.

Treatment.—In preparation for the operation, the patient was ordered hot vaginal baths morning and night. To alter the condition of the urine, the following prescription was used:

R. Acid Benzoic. 3 ij.
Sodæ Biborat. 3 ij.
Aquæ Cinnamomi. 3 vj.

M. Tablespoonful three times a day.

Feb. 16th, *First Operation.*—The parts were in good condition, and the patient was placed under the influence of ether. Fistula No. 1 was closed by simply denuding the edges and bringing together in a transverse line with nine silver wire sutures. The occluded portion of the urethra was opened by forcing a sharp-pointed sound through the tissues, and kept open by means of a catheter.

Feb. 26th.—Sutures were removed to-day. The union seems perfect. Bowels have been kept confined, and will not be evacuated until the twelfth day.

March 9th, *Second Operation.*—The patient being under ether, the edges of fistula No. 3 were denuded, and extended laterally till the denuded surfaces could be brought together without making any fold of vaginal tissue at the angles. The points of interest in this operation were:

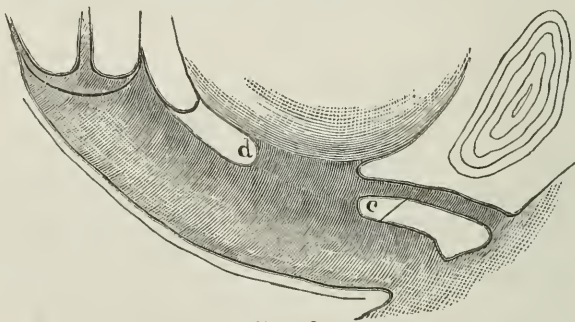


FIG. 2.

First.—That the anterior edges of the fistula, which presented much more surface than the posterior, owing to the thinning of the latter from sloughing, should be denuded only so far as was necessary.

Second.—The care necessary to bring the openings of the urethra into accurate apposition and secure continuity of the canal. This operation was also successful, and the sutures were removed on the tenth day, as in the first operation.

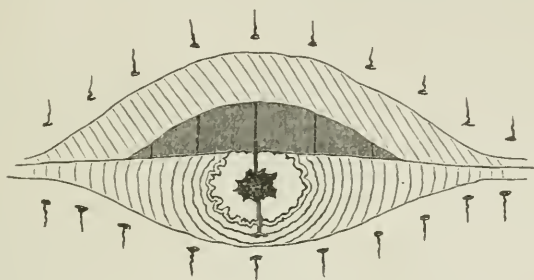


FIG. 3.

April 13th.—The third operation was performed. (See Fig. 3.) By the second operation the inner segment of the urethra had been drawn downwards, and now was in the position indicated in the diagram, so that a sound passed out into the vagina, instead of into the bladder; and if the edges of the fistula were carelessly united, the bladder would be completely closed, while the urethra would open into the vagina. To avoid this the tissue below the urethra, at *c*, was denuded and brought against the posterior edge of the fistula at *d*, thus throwing the opening of the urethra up into the bladder. The posterior edge of the fistula being more extensive than the anterior, the sutures had to be passed nearer together in the anterior edge. Eleven sutures were used, as the fistula was necessarily extended out under the rami in order to make the edges meet nicely.

April 23d.—Sutures removed to-day. The operation is successful. The urethra is drawn back slightly by the operations on the anterior wall, and she does not retain her water perfectly.

May 8th.—The uterus was put in position, and a block-tin (Hodge-shaped) pessary applied.

May 12th.—The patient was discharged cured.

February 6, 1876.—Patient was readmitted to have the cervix closed.

Feb. 8th.—The patient being under ether, the laceration was closed with four sutures on the left side and three on the right.

Feb. 15th.—Sutures removed. Union is perfect.

Feb. 26th.—The uterus is retroverted, as it was necessary to remove the pessary she was wearing when the operation on the cervix was performed. Uterus was put in position, and pessary reintroduced.

March 3d.—Discharged cured.

OVARIAN CYST TREATED BY ELECTROLYSIS.

BY

DR. R. HESSE,

Brooklyn, N. Y.

IN October, 1874, I was called to see a patient suffering from an abdominal tumor. I made the diagnosis of ovarian cyst, which was confirmed by Dr. E. Noeggerath, of New York. In my journal I find recorded the following history:

Patient 43 years of age; had one child about 20 years ago; no miscarriage; menstruation regular. Three years ago she noticed an increase in size of the abdomen, the circumference being at the time of my examination about 29 inches (measured over the umbilicus). For two years I almost lost sight of her, being occasionally told by neighbors that she was about the same.

In October, 1876, I was again called to see her, a slight cedematous swelling of the legs having shown itself.

The circumference of the abdomen had meanwhile increased to 35 inches, the increase being more observable since August last, since which time there had been no menstruation. The tumor caused but little suffering, although her general health seemed failing, and she was becoming emaciated. The urine was free from albumen.

I saw her then in consultation with Dr. A. J. C. Skene, and we agreed that at present an operation was not urgent. But as we had lately read the cases published by Semeleder, of New York, and Fieber, of Vienna, we thought it proper in the meantime to try electrolysis, especially as we believed that if no good, certainly no harm would be done.

On the 11th of November (with the kind assistance of Dr. Wunderlich) I introduced a steel needle three inches in length through the abdominal walls in the median line, about midway

between umbilicus and pubes, and brought it in connection with the negative pole of a Drescher's (zinc and carbon) galvanic battery. The positive electrode was introduced into the vagina, touching the os externum uteri. The current used gave a distinct shock to the tongue and decomposed water very slowly.

The pain experienced by the patient (who was somewhat nervous) was not very great. The first sitting lasted ten minutes. On the 13th of November, two days afterwards, I found the patient very well satisfied with the treatment; the circumference three inches less, namely 32 inches; the abdominal walls flaccid. The patient remarked that for the first time in four years she was able to bend her body forwards. This time I inserted two needles (one platinized)—one through the linea alba, the other two inches to the right, the positive electrode being pushed up to the os internum. The sitting lasted 15 minutes; pain about the same as the first time.

The third sitting again took place two days afterwards, on the 15th of November. The circumference of the abdomen had again decreased about three inches, being only 29 inches. The abdominal walls were flabby, similar to those after confinement. I intended to insert three needles, but not being able to define the boundary of the tumor very clearly, I introduced only two, both on the left side, keeping the tumor pressed as much as possible towards the left. The sitting lasted 15 minutes.

The following day, not having time to examine the patient myself, I was informed that the circumference was only 27 inches. No unpleasant symptoms whatever followed any of these three sittings, the patient merely remarking that one or two hours after each she had abundant micturition.

November 30th. The patient has just had her menses, of the same duration as before. The circumference of the abdomen remains the same as after the third sitting, namely 27 inches. There is no doubt that the cyst still contains fluid, but as the boundary of the cyst is not very distinct, and the patient experiences no inconvenience whatever, at present I believe it safer to wait, and to recommence the treatment only when a refilling of the cyst takes place.

December 13th. Circumference of abdomen as at last examination. The residue of the cyst seems somewhat harder.

OBITUARY.

GUSTAV SIMON.

PROFESSOR GUSTAV SIMON was born at Darmstadt on the 30th of May, 1824. He was educated at Heidelberg and Giessen, taking his medical degree at Giessen. He then accepted the position of military surgeon at Darmstadt. While here, he visited Vienna, Paris, and London for scientific observation. In 1861 he was called to Rostock, where he became professor of clinical surgery and director of the hospital. In 1867 he was chosen professor of clinical surgery in the University of Heidelberg, which he retained till the day of his death. He was repeatedly invited to other universities, but preferred to remain at Heidelberg. In 1866 he was director of the Military Hospital at Moabit near Berlin. In the late Franco-Prussian war he was surgeon-general of the Reserve Barracks of the Grand Duchy of Baden.

In 1851 he published his first treatise on "Gunshot Wounds," containing the results of experimental researches, with original views on the subject.

In 1854 he published a "Description of the Operation for Vesico-vaginal Fistula." In 1862 he published more extended observations on the same subject. And the last paper he wrote was on vesico-vaginal fistula, published only a few weeks before his death.

In 1868 appeared his "Communications from the Surgical Clinic of Rostock." They contain a long series of original observations, with some "New Methods of Operating in Cases of Incurable Fistulæ," also "Double Puncture and Subsequent Incision in Cases of Abdominal Echinococcus and Hydro-nephrosis," "The Pendulum Method for the Reduction of Dislocated Humerus," "Kolporaphia Posterior for the Cure of Prolapsus Uteri," "Operation for Ruptured Perineum," "Contributions to Plastic Operations of the Face, Vagina, and Rectum," "Hare-lip and Cleft-palate," "On Covering Ampu-

tation and Resection Wounds with Diseased and Perforated Skin Flaps," "Treatment of Malignant Disease of the Vagina, Bladder, and Rectum by the Curette, and the Methods of Exposing them sufficiently to View by Using the Sims' Speculum for the Vagina and Rectum."

Among his last contributions to surgical science is his "Method of Rendering the Female Urinary Bladder accessible, and on Probing the Ureter in Women," a paper which, in the short space of six months, has appeared in four different languages. His "Manual Palpation of the Rectum, etc.," is now known and adopted by the profession all over the world. He finished the second part of his great work, on "The Surgery of the Kidneys," but a few days before his death. The third and last part will be laid before the profession in an unfinished state.

Until the last day of his life, he was busily occupied with the arduous duties of his profession.

The foregoing *resumé* of Prof. Simon's labors was furnished by his friend and pupil Dr. A. C. Bernays, of St. Louis, Mo., now in Heidelberg.

When in Europe, last summer, I made a visit from Paris to Germany especially to see Koeberlé at Strassburg, and Simon at Heidelberg. At Baden, I telegraphed to Simon, to know if he was at home, and received as answer: "Yes. Very ill, but most happy to see you." Arriving late, I went to see him at 9 P. M. He was in bed, and received me most cordially. I remained but a short time, but in ten minutes he arranged a day's work, to begin at 9 the next morning. On my arrival, next morning, I found several young doctors and many patients in the ante-chamber. Simon gave me a real clinical lecture for more than three hours, illustrating his method of operating for vesico-vaginal fistula, lacerated perineum, for exploring the female bladder, probing the ureters, and for exploring the abdominal cavity by passing the hand into the rectum.

It was a hard day's work for a man in good health. But he did not seem to think of himself for a moment. He was wholly absorbed by the pursuit of science for the relief of humanity. His genius, learning, industry, and skill are known and recognized by the profession everywhere; and we call him great. But his qualities as a man can only be realized by per-

sonal contact. His earnestness and enthusiasm, his sincerity and honesty, his generosity and kindness of heart, all impress us with the conviction that he was one of the best of men.

I spoke to him of his health. He supposed he had emphysema, with some congestion of the lungs. He was not aware of his real condition, though it was well understood by his friends.

The propriety of withholding from such a man the gravity of his disease seems to me questionable.

He died on the twenty-seventh of August last, of an acute attack of œdema of the lungs, caused by an immense aneurism of the pars descendens of the thoracic aorta, which had greatly compressed the lower half of the left lung and pulmonary veins. The circumstances of his death are curious and interesting. One of his favorite assistants, Dr. Bernays, called, on the morning of the 27th, to read to him the translation of his paper on vesico-vaginal fistula, which he wished to see published in America. He expressed himself as well pleased, and Bernays was about to leave, when Simon, who was in bed, called him back, and said: "Don't forget to send my needle-holder and some needles to Mr. Marion Sims, and tell him I shall go to the Congress of Gynecologists in America if my health improves."

This was but twelve hours before his death.

At 4 p.m. Dr. Braun, his first assistant, called to report the condition of patients whose after-treatment he was conducting in the hospital for Simon. Simon gave him instructions about having some important cases ready for operation at 11 the next morning. Dr. Braun left at 6 p.m., and he had passed but a few steps from the villa, when Simon was taken suddenly with dyspnœa. He raised up in bed, ordered some one to open the window and call Dr. Braun, who hurriedly returned, expecting to find his friend and teacher dead. Simon requested him to call a carriage and go for his tracheotomy instruments as soon as possible. Braun obeyed, and returned in twenty minutes with Dr. Haek. Simon now said: "Operate quickly; perform high tracheotomy." He refused to take an anæsthetic. Dr. Braun operated as quickly as possible. The veins of the neck were greatly distended, and there was consequently some trouble. Simon still hurried him on. There

was a good deal of venous hemorrhage, which had to be controlled before the canula could be introduced.

Prof. Simon then said he felt easier, and breathed freer. His pulse kept up till 10 o'clock, when there was a sudden collapse, and he died about midnight. And thus passed away one of the great lights of medicine.

The name of Simon was as well known and as highly honored among us as in his own fatherland. Science knows no boundaries. It is cosmopolitan, and its votaries all over the world are linked together in a common brotherhood. The success of one is the glory of all. The loss of one is a loss to all. Had Simon been an American, we could not have felt his death more keenly, nor mourned him more sincerely.

For a quarter of a century he has been prominently before the profession, and always as the standard-bearer of an onward movement. His name is the synonym of progress, and his fame will endure for ages.

J. M. S.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Reported by PAUL F. MUNDÉ, M.D., Secretary.

[The following was inadvertently omitted in the report of the meeting held April 18, 1876, Vol. IX., page 639 :

After Dr. SKENE's relation of his

CASE OF EXFOLIATION OF THE MUCOUS MEMBRANE OF THE UTERUS,
AS THE RESULT OF INTERRUPTED GESTATION,

DR. MANN remarked that there seemed to be but one explanation of the case. The membrane presented certainly bore a very strong resemblance to the uterine mucous membrane; but from its thickness and size, it could not have come from a normal uterus. We must look, then, for a cause for the enlargement; and this we find in the condition of pregnancy which may readily be supposed to have existed. There being no trace of the ovum—either of the fœtus or of the membranes—in the mass expelled, the fœtus must have been extra-uterine. This hypothesis is supported by the occurrence of the attacks of pelvic peritonitis and the persistence of the products of the inflammation; also by the known behavior of the decidua in cases of extra-uterine pregnancy. A careful microscopic examination of the specimen would probably settle the question.]

Stated Meeting, June 13, 1876.

The President, DR. T. G. THOMAS, in the Chair.

DR. THOS. ADDIS EMMET reported a

CASE OF REMOVAL OF A UTERINE FIBROID BY TRACTION.¹

DR. THOMAS said that he must express dissent from Dr. Emmet's views as regards traction and excision of fibroids of the uterus. He decidedly favored enucleation, from which he had had very favorable results. In one of his last cases the lower portion of the tumor, which was of the size of an orange, became sloughy, the temperature rose to 104° at the time of the operation. He slit up the cervix, seized the tumor with a vul-

¹ See ORIGINAL COMMUNICATIONS, this number.

sellum forceps, and pulled it out. The patient recovered without a bad symptom. He considers the enucleation of fibroids to be one of the greatest triumphs of modern surgery.

DR. EMMET said that he would enucleate smaller tumors, but never larger ones than one pound weight. He does not approve of opening the capsule and detaching the tumor by sweeping a sound around it, as Dr. Sims does; he thinks a large field for septic absorption is thus offered.

DR. THOMAS agreed with Dr. Emmet that he would not attempt to enucleate so large a fibroid as the one reported this evening. In any case, he had always looked upon enucleation as a last resort.

DR. JOHN G. PERRY said that, in his opinion, it was impossible to decide beforehand in every case what plan of action—enucleation, excision, or traction—would be most feasible and advisable. He was inclined to favor enucleation as the least objectionable in most cases.

DR. FREDERIC D. LENTE reported a case of

OPERATION FOR ATRESIA OF THE VAGINA IN A MARRIED WOMAN.

“Mrs. —, aged 28 years, married four months, sojourning for the winter at St. Augustine. History as follows: Had always been in rather delicate health. From the first date of her catamenia had dysmenorrhœa and irregularity, suffering violent pains for days, the discharge coming very slowly. Would then see nothing for two to four months. From long continuance of these troubles, her nervous system had become much shattered. Her husband, finding that some trouble existed, called in Dr. H. Caruthers, who found excessive hyperæsthesia of the genitals, so as to render a satisfactory examination impossible; he ascertained, however, the existence of atresia with a minute opening. I saw the patient with him, March 7th, and, having placed her under the influence of ether, proceeded to examine and to operate with the assistance of Dr. Caruthers and Dr. Janeway of the Army. The vagina ended immediately behind the hymen. The parts resembled those of a young girl before puberty. The uterus could be felt well developed. With a good light and a close examination with the probe, we could not discover any opening, although Dr. C. had previously discovered one. Fortunately, a milky discharge with a streak of blood in it was seen exuding from a point at the upper part of the obstruction; but a pocket probe was too large to enter, and a very small probe, combining a director, was passed about an inch and three-quarters, but would go no further, and did not pass in the direction of the cervix.

I commenced by passing a narrow bistoury along the grooved probe, and cutting anteriorly and posteriorly; then passed in a pair of dressing forceps, and stretched this; then passed in my little finger, and worked it carefully towards the cervix, tearing with the nail as I proceeded, until I got in the vicinity of the cervix. Then enlarged with a blunt-pointed bistoury, until I could force in the small blade of Sims' speculum; could not find the cervix; then worked with the finger until I found myself behind Douglas' *cul-de-sac*; then cut in front of this carefully, and exposed a pocket of the vagina, in which, after enlarging with the scissors, I found the cervix, looking perfectly normal. I now forced in the larger blade of the speculum, and having thus put the tract on the stretch, divided all the tense muscular fibres with the bistoury, coming quite close to the mucous membrane of the rectum. The uterus measured two and a half inches. Having passed in, without any force, Sims' largest vaginal plug (glass), the patient was placed in bed. There was no hemorrhage.

April 3.—Saw the patient to-day for the first time since the operation, twenty-six days, Dr. Caruthers having had charge of her in the meantime. Her progress has been remarkable. No pain of any consequence since the operation. Slept well, and ate as well as usual. The plug was removed daily by Dr. C., cleaned and replaced, and an injection of weak solution of carbolic acid used. After a few days, the doctor, finding that the plug was producing some irritation, used a smaller size, after which there was no further trouble. But she was so thin that she complained of the bed, and Dr. Janeway kindly sent a water-bed from the barracks. This was a great relief; but, after a day or two, nausea came on, and gave the doctor some uneasiness, as he could discover no cause. After five days, it was remembered that she was unusually prone to sea-sickness, even in an open boat on a river; and supposing that the slight motion on the bed might be the cause of the nausea, she was removed from the bed, and from that time the nausea ceased. This little episode of the case is mentioned as an unusual fact in the etiology of sea-sickness. The purulent discharge, which was profuse at first, soon diminished, and has now almost ceased. She has removed and introduced the plug herself for some time, and now leaves it out five hours, increasing this interval gradually. She sits up, and will soon ride out; and, a few days ago, her catamenia appeared at the proper time, and with so little symptom that she attributed the discharge to something else. It has now ceased, after having proceeded in a perfectly normal manner for the first time in her life."

THE THERMOSCOPE AFTER OVARIOTOMY.

DR. PERRY related a successful case of ovariectomy, in which he employed the thermoscope with marked advantage. The length of the abdominal incision was 3"; there was only one adhesion; the pedicle was ligated with hemp ligature and dropped; the abdominal wound was closed with silver wire sutures. The thermoscope had been used for two days prior to the operation, and showed in the epigastrium a heat radius of three inches, in the hypogastrium two inches. After the operation the temperature was 98°, the pulse 92; on the third day the temperature was 99.50°, the pulse 96; there was a good deal of nausea, and he expected an attack of peritonitis. The thermoscope showed in the epigastrium a heat radius of five inches—no elevation in the hypogastrium. He therefore thought that the disturbance might come from the stomach, which organ had been but sparsely supplied with nutrient material since the operation. He gave a bit of beefsteak and some wine at once; and four hours later the heat radius in the epigastrium had fallen again to 3", and the temperature and pulse went down. His supposition of exhaustion or inanition being the cause of the rise of temperature was thus confirmed, and agreed with observations made on himself, that the heat radius over the stomach increases after eating and during inanition. His patient made an excellent recovery, left her bed on the seventh day (before the stitches were removed), and travelled two hundred miles on the thirteenth day. He thinks that this case proves the value of the thermoscope, which to his knowledge has never before been used after ovariectomy. If it will detect such slight variations of local temperature as in this case, it certainly is an exceedingly useful instrument on such occasions.

Stated Meeting, June 20, 1876.

The President, DR. T. G. THOMAS, in the Chair.

DR. WALTER R. GILLETTE reported

A CASE OF PSEUDO-OVARIAN CYST.

"Jane D., aged forty-two years, a native of Ireland, was admitted to St. Francis Hospital, March 15, 1875. She had borne three children. Her menstrual functions had been normal until one year ago, when they apparently ceased, but two abortive efforts at menstruation having occurred since. At this time she was in good health. About six months ago she

noticed an enlargement of the abdomen, which seemed more particularly to involve the right iliac region. There was occasional pain of a dull, dragging nature—not severe enough to interfere with her ordinary labors. Some time after this the swelling diffused itself and involved the left iliac region. From this it seemed to develop symmetrically, and she had several sharp attacks of pain, which confined her to her bed. This was all the history I could elicit from her. Her appearance was fair. Nutrition seemed moderately good, and there was no external evidence of any severe organic mischief. The pulse was somewhat accelerated; temperature normal. The abdomen looked like that of a woman eight and one-half months advanced in pregnancy. It measured thirty-seven and one-half inches. It was white and tense, and pressure over the right iliac region caused pain. Upon closer palpation, three distinct tumors were felt. One extending towards the left iliac region, another in the hypogastric region, extending over the left inguinal region, and occupying the abdomen to the level of the umbilicus. There was an apparent division of these tumors upon the left side at a point running from the centre of Poupart's ligament. They were movable to a limited extent, and percussion on them revealed complete flatness. Fluctuation was indistinctly detected in the region around these masses. There was no unusual fulness of interosseous lateral lumbar spaces, and percussion here was tympanitic.

Vaginal examination revealed a mucous polypus pending from the os of a patulous elongated cervix. The roof of the pelvis was distended, resisting, and painful at right of cervix. The sound could not be introduced into the uterus, nor could the position of the fundus be positively determined, although it was thought to be strongly anteflexed. Examination per rectum failed to assist us in determining this, and only revealed what we had previously felt through the vaginal wall. The examination distressed her somewhat, so that morphia was administered to her relief. As there was considerable distention, I aspirated the tumor, entering to the right of the median line, midway between the crest of the pubes and the umbilicus, and evacuated about three pints of clear, amber-looking fluid. Having drained off this fluid, the tumors before mentioned were more easily made out. They were in a measure mobile, and dull on percussion. The tapping gave her great relief, so that she was in much better condition. The fluid removed was unfortunately not examined microscopically.

March 23d, at her request, for the relief of distention, I aspirated again, this time taking three pints of fluid.

I broached the subject of an operation to her as the only chance for her recovery, and she eagerly demanded it. The patient was seen by my colleague, Dr. Howe, and Dr. Mc-Masters, and they agreed with me, upon the data presented, that the case was one of multilocular ovarian cyst, and I appointed March 27th for the operation. Upon that day Prof. Howe, Prof. Budd, Dr. Quackenbos, Dr. Kitchen, and others were present. The patient was examined thoracically, and no disease of heart or lungs found. She had been prepared in the usual way, but was under some considerable excitement, her pulse being about 120. Ether was administered in the room adjoining, and she rapidly came under its influence. Upon placing her on the table, she suddenly stopped breathing, became cyanosed, and died. All possible efforts were made to resuscitate her, but without avail. By careful measurement, it was determined that but two ounces of ether had been administered. A post-mortem examination was absolutely refused; therefore the cause of her death must be wholly conjectural. I was permitted to make a small opening into the abdominal cavity, ostensibly to draw off its contents preparatory to encofining. This was sufficient, however, to reveal the error in diagnosis. The uterus and ovaries were normal in size and *in situ*, but the peritoneal covering was so thickened and indurated that they felt as if encased in sheet-iron. In the region where I had discovered the ovarian tumors, were immensely thickened plates of peritoneum, studded in the abdominal walls. These plates were certainly an inch thick, and were solid and nodulated. They encapsuled no fluid. In the peritoneal cavity, and in the abdominal cavity, was an accumulation of ascitic-looking fluid. The flat percussion note was thus accounted for, and the absence of distinct fluctuation no doubt was occasioned by the thickened and rigid peritoneum which everywhere lined the peritoneal cavity. The omentum and intestines were everywhere infiltrated, thickened, and glued down. The spleen and liver were nodulated and hardened; and indeed, wherever my hand could reach, I felt this induration and matting of the tissues. The masses gave the impression that they were cancerous; and that I believe was their condition, though it was conjectured that they might be syphilitic."

DR. JOHN S. WARREN presented a paper on

DYSPAREUNIA.¹

¹ See ORIGINAL COMMUNICATIONS in this number.

Stated Meeting, September 19, 1876.

The Second Vice-President, DR. C. C. LEE, in the Chair.

DR. COLIN MACKENZIE presented the following history of a

CASE OF HYDRORRHOEA.

“The following case is reported on account of its being, to me at least, unique—as, from a careful study of the literature of the subject, I cannot find any which agrees with it.

The subject of hydrorrhoea of the gravid uterus has been very thoroughly discussed in medical journals and monographs, and many and various theories given for its occurrence; but it is not the aim of this article to give a *resumé* of the subject, but only to report a single case, which was peculiar in two ways:

First. From its occurrence during two successive pregnancies.

Secondly. Occurring during each menstrual period.

Mrs. Rose S., age 31, the mother of two children, the pregnancies and labors being natural in every respect, was operated upon by Dr. E. Noeggerath for a subperitoneal fibroid. Six months after she became pregnant. During the first three months of pregnancy she had more or less discharge every few days, of a semi-transparent fluid, from the vagina, occasionally so copious as to soak through her clothing and even the bed. It seemed to be more profuse at night. During this time her condition was excellent. This aqueous discharge continued during her pregnancy; was very irregular, not noticeable for a week or two, then would appear daily and frequently during the twenty-four hours—sometimes copious, at others slight.

When, however, she evacuated the bladder or rectum, there was always more or less discharge. Occasionally even the exertion of coughing, sneezing, and passing of flatus producing it. In a word, anything causing an action of the abdominal muscles brought it on. It was never accompanied by any febrile action.

A thorough vaginal and bi-manual examination revealed nothing. At one time it was suspected to have come from the bladder; but examination of that organ negatived such an opinion, and the fluid collected by means of wringing out the napkin worn (the only method of obtaining it) was totally devoid of the odor or other peculiarities of the urine. It was, as I have said, nearly colorless, and seemed to be purely serous in character. The patient was not abnormal in size, and did not suffer from it any way excepting its inconvenience and the mental anxiety that it might be a fatal malady.

These flows were repeated often until her confinement, which began at two o'clock P. M. At each pain there was a free discharge of water, until half-past one o'clock A. M. next day, when she was delivered of a living boy. The labor natural, and the uterus contracting well. There was only a small amount of amniotic fluid. The placenta was medium in size, and, on examination, presented nothing abnormal. It was removed entire and intact. It was examined carefully and microscopically by Dr. Noeggerath and myself, but showed nothing very unusual; some fatty portions near the edge, no inflammation or its product, no extra congestion, no separation of its parts.

During the two succeeding days the discharge was wholly watery, and very profuse. On the morning of the third day this ceased, and there was no appearance of any discharge till that night, when the regular lochia appeared, and continued until the thirteenth day after confinement, when, as she was walking from the closet to her room, she observed another discharge. She immediately sought her bed; but the discharge of water continued for some hours.

Nearly five weeks after her confinement a large amount of water was passed, accompanied by irritation of neck of bladder, partial prolapse of the uterus, and a free muco-purulent discharge. This watery discharge was repeated in smaller quantities, however, for three days, when it ceased entirely.

She nursed the child till the summer, then went to the country, where the infant died of cholera infantum.

In about two months after this the menses appeared, with the following peculiarities: A few days before the expected period she had a slight discharge of this watery fluid, and, on the appearance of the natural discharge, it ceased. The regular menstrual flow continued for three or four days, and was followed by this clear fluid until the sixth or seventh day, when it ceased, and did not return until just before the next menses. The patient at the end of the year passed from my hands.

The following year she became pregnant; but there was nothing in the way of these discharges until about the fourth month, when they again appeared, but not so copiously or frequently as during her previous pregnancy.

Her physician, a regular practitioner, consulted me concerning her former condition, and watched her case very carefully. At the full time she was confined with a girl. Labor natural and easy; the placenta was carefully examined, but showing nothing abnormal. The lochia were natural, and no aqueous discharge was again seen or felt.

The patient soon after this moved to Colorado, and was entirely lost sight of.

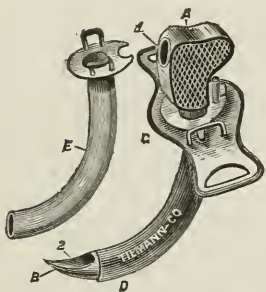
I have never been able to satisfactorily account for this case. At one time it was supposed to be a simple case of hydrorrhœa, at another as coming from the bladder, again as the hydrometra ascitica of Braun, a collection of fluid between the chorion and the uterine wall; but its continuance during or at the time of the menses seemed against this theory, and an examination of the placenta (not showing any separation between amnion and chorion) proved it not to be liquor chorii.

The only way I can account for this case, and that but partially, is the theory advanced by Dr. Barnes, of London, that "he believed hydrorrhœa, especially of early pregnancy, resulted from an hypertrophied condition of the glands of the uterine mucous membrane."

DR. HORACE T. HANKS exhibited an

IMPROVED TRACHEOTOMY INSTRUMENT.

"In conversation with surgeons who have performed tracheotomy, I learned that their only difficulty has been the danger from suffocation by the entrance of blood into the trachea, or from delay during the effort to introduce the curved tubes. My own experience has confirmed the truth of this statement. To avoid the danger of blood entering the trachea and to expedite the operation, I have devised the instrument which I now show you. It consists of a curved, hollow, sharp-pointed trocar, with handle (also hollow) attached—the whole about three and a half



inches in length. It is made to exactly fit the larger of the set of tracheotomy tubes. In operating, the better way will be to cut down upon the trachea, which must be held firmly with tenacula, and then force the trocar with the larger canula through between any two of the rings. When the instrument has entered the trachea, the trochar may be removed and the smaller canula substituted and fastened in the usual manner. The advantages of the instrument are: 1. But little blood, if any, can enter the trachea during the operation. 2. The patient is supplied with fresh air *directly*; the trocar penetrates the trachea.

The instrument might be used with safety—with no previous incision—on a lean patient, child or adult, in case of sudden

obstruction of the larynx, when a little delay would be disastrous."

DR. LEE said that several similar instruments had been invented, one by Dunham, of London, but, because of their becoming so easily clogged, they had been given up.

DR. REYNOLDS thought that great difficulty would be experienced in introducing the instrument on account of the mobility of the trachea.

DR. RODENSTEIN said that, since presenting his instrument a year or two since, a contrivance which very much resembled the one shown by Dr. Hanks, he had had a chance to use it. He found no trouble in introducing it, and instant relief was afforded. The patient however eventually died. By its use all danger of blood in the trachea was avoided, and he considered that there was less danger of wounding the posterior tracheal wall than by a knife.

DR. LEE thought that in many cases where time was precious, any instrument facilitating rapidity of operation was of great value; and this was certainly an advantage which these instruments possessed.

DR. JOSEPH E. JANVRIN read the notes of a

CASE OF PUERPERAL PHLEBITIS.

"Mrs. C., æt. 29, came under my care for treatment during the summer of 1873. She had been married about three years, and during that period had had six miscarriages, occurring usually at the second or third month.

When I first saw her she was suffering from chronic uterine engorgement and anteversion. She was under treatment successively for the greater portion of two years. During the winters of 1873-74, after experiencing a severe chill one day, from too protracted a ride, she had an attack of pelvic cellulitis, complicated with an abscess of small size in the right pelvic fascia, which discharged per vaginam. In July, 1875, she became pregnant; and, on my return from the country, about the middle of September, when she was nearly two months advanced in pregnancy, I advised perfect rest in bed, fearing that she might miscarry if allowed too much liberty. She was kept in bed the greater part of the time from this date until she had passed the sixth month—about the 1st of February, 1876. At the second, third, fourth, and fifth months of gestation severe uterine pains occurred, and were controlled only by the administration of morphia or codeine, and I am convinced that if she had been allowed to be up and taking exercise she would have miscarried. About midway between the sixth and seventh

months she was allowed to sit up and to walk around the room. After the seventh, and from that date up to the date of confinement at full term (April 20th), she rode out every pleasant day, and gained rapidly in strength and vigor.

Had no unusual trouble during her term of pregnancy, aside from the great tendency to abort, excepting several severe attacks of intestinal colic.

April 19th, about five P. M., after having taken a ride through the Central Park, she began to have labor pains. They continued, at very short intervals, throughout the whole night, and about six A. M. the following day the membranes ruptured. The presentation of the child was occipito-posterior; and as the pains did not increase in force, but rather diminished than otherwise, and she had been under the influence of ether since about 4 A. M., I thought it advisable, about nine o'clock, to apply forceps, and extract the child. Accordingly I sent for Prof. Peaslee; but, on consultation, it was decided to wait a while longer, putting her *fully* under the influence of ether in the meantime. The reason for my using ether, as a means of thoroughly quieting her, in preference to morphia, was this: I was convinced that it would take a larger quantity of morphia than it was either safe or justifiable to use, she having become so habituated to its use throughout the period of pregnancy. She was accordingly kept fully under the influence of the anæsthetic until half-past one P. M.; but the pains did not increase in force. I then applied Elliot's forceps, the head being high up in the superior strait. While making traction quite forcibly, but very slowly, the blades of the forceps sprung, and in their descent cut through the perineum—making a complete laceration through the sphincter ani, and about an inch and a half up the rectum. I applied them again; but as it required a great deal of force to move the head at all, and as I found the blades began to yield again, and it was evident that it could not be extracted except by a stronger pair of instruments, I immediately sent for my friend, Dr. C. E. Billington, who responded promptly, and brought with him a pair of very strong instruments. I presume some twenty minutes were lost by this delay. With the stronger instruments I had no difficulty in delivering the head in a very few moments. The child was, however, still-born, was quite large, and perfectly well nourished. Had evidently died either just prior to or during delivery. No injury to the head could be discovered. The lacerated perineum and rectum were immediately sewed up, and a large hypodermic injection of morphia administered at once. Opiates were also administered by the mouth, with the hope of controlling the bowels, and the usual vaginal injections,

for the purpose of cleanliness, used every morning and evening.

There was no unusual reaction or inflammatory symptom of any kind manifest, until the third day, when, immediately after the vaginal injection, she was seized with severe uterine colic, some of the water evidently having entered the cavity of the uterus. This was controlled by a hypodermic injection of morphia. Lochial discharge abundant and normal. Slight tenderness over the uterus and broad ligaments showed itself on that evening; still it was very slight. Pulse at no time exceeded 90, and temperature not over 101° , until the 13th day, when symptoms of phlebitis of the left femoral veins set in. This was succeeded, on the following day, by a similar condition in the right thigh. The temperature rose to 103° , and the pulse to 96. There was a slight increase of tenderness in both broad ligaments.

I should here state that the sutures were removed on the eighth day, it having been impossible to control the bowels, and only a partial union of the lacerated surface having taken place. There had been no rigor at any time—no suppression or diminution in the amount of urine voided—the catheter having been used during the first eight days; and the urine, on examination, having been found quite normal.

During the five days, from the 13th to the 18th day after confinement (the five days following the inception of the phlebitis), she was given quinine and morphia, as needed. Hot flax-seed poultices were applied over the thighs, and the hot vaginal injection given twice or three times daily. A very nourishing diet—beef-juice, milk-punch, etc., was given. Notwithstanding this, she became rapidly anæmic, and lost flesh, and began to show symptoms of cerebral anæmia, and a hard mass on either side of the uterus showed pelvic cellulitis, etc.

May 7th (18 days after confinement).—Dr. C. C. Lee saw her in consultation with me. Dr. Lee had seen the patient once or twice during her pregnancy, and also on the third day after confinement, when she had the attack of uterine colic; and at this visit was at once struck with the marked anæmic condition and the generally changed appearance of the patient. It was decided to increase the amount of the stimulant and nourishment; and, to this end, she was given a liberal allowance of Burgundy wine, beef-juice, etc., and also injections of brandy and beef-juice.

Up to this period her mental faculties were comparatively unimpaired; but during this night she became partially unconscious. Pulse was raised to 120, and temperature increased

to $104\frac{1}{2}^{\circ}$. It became evident that she was slowly sinking from the influence of septic poison.

On the following day Prof. Fordyce Barker was added to the consultation. By this time she had become perfectly unconscious. Pulse continued at 120; temperature reached $104\frac{8}{10}^{\circ}$. There was marked evidence of the formation of pus in the right pelvic cavity, also a semi-fluctuating mass to the back and left of the uterus.

It was impossible to reach this mass *per vaginam*, so as to puncture it. Prognosis decidedly unfavorable. I suggested the administration of seven grs. of salicylic acid every two hours, which was concurred in by Drs. Barker and Lee; and it was also decided to keep up the use of the stimulants and nourishment to as great an extent as possible.

During the succeeding thirty-six hours, and up to the midnight of Tuesday, May 9th, she continued gradually failing, and it seemed as though she could not survive another twenty-four hours. The stimulants and nourishment, by stomach and rectum were continued every half hour; as also the administration of the salicylic acid and quinine.

Early the following morning (Wednesday, May 10th), the twenty-first day after confinement, the abscess discharged *per vaginam*—the discharge being of a most offensively fetid odor. She continued unconscious for some forty-eight hours longer (having already been in that condition for about four days), and then gradually recovered consciousness, but only in a partial degree. Soon after the discharge of the abscess commenced, the pulse and temperature began to fall—to such an extent that, on the third day from that date, the temperature registered 101° and the pulse 104 to 108. The bowels moved regularly, but rather loosely, about twice in each twenty-four hours—the discharges invariably being of an extremely offensive character. On her return to consciousness it became painfully evident that her mind was even more seriously affected than at any previous period of her sickness, and that her intellect had finally succumbed to the combined influence of the septic poison and the anæmia.

During the following two weeks very little change took place—the patient still remaining in a semi-conscious condition, and the discharge from the vagina continuing at intervals and maintaining its very offensive character. The pulse was recorded at from 90 to 100, and the temperature ranged between $99\frac{1}{2}$ and $100\frac{1}{2}^{\circ}$.

May 22d.—The discharge of pus ceased, and did not return again until the following night, and then was only brought on by considerable manipulation over the abdomen and in the

vagina. It was found impossible to discover the opening by which the pus descended into the vagina; and therefore, after repeated examinations, I at length came to the conclusion that it found its way first through the uterine wall, and then down through the cervical canal. [At this date I discovered some pus exuding per rectum.]

During the 22d and 23d of May she again relapsed into unconsciousness, from the continued absorption of septic poison.

On Wednesday, May 24th (just five weeks from confinement), Dr. T. G. Thomas saw her, in consultation; and, after a careful examination, failing to find any opening for the pus, either per vaginam or rectum, it was decided that in all probability it came by way of the cervix, and that the opening into the rectum was at a considerable distance up—at any rate beyond the reach of the finger. Nothing new in the matter of treatment was suggested, it being found impossible to effect anything through surgical interference. A profuse discharge, both per vaginam and rectum, followed on the evening of that day, and she regained her previous semi-conscious condition. At no time during these past three days did the temperature rise above $100\frac{1}{2}^{\circ}$, though the pulse was weaker, and advanced to 120; and the breath assumed the peculiar sweetish odor indicative of the septic condition.

During the following two days the pulse gradually reduced, ranging between 96 and 100, and the temperature registering from 100° to $100\frac{1}{2}^{\circ}$. A severe rigor, for the first time during the entire history of the case, occurred on Friday, the 26th inst., having been preceded for some twelve hours by a complete cessation of the discharge. A repeated attempt to find an opening, with the consequent external pressure, however, produced a resumption of the discharge, which continued freely, at frequent intervals, during the three succeeding days—the 27th, 28th, and 29th inst. The patient appeared rather more emaciated, though she still took as large a quantity of stimulants, nourishment, etc., as she had previously done.

From this date, until about June 20th, she remained in the same condition—no material change having occurred, the discharge of pus continuing free and uninterrupted the entire time.

On or about June 20th she began to fail rapidly—the excessively hot weather causing her to suffer very severely up to the period of her death, which occurred on the 29th inst.

No post-mortem examination was permitted, though it was urgently requested.

The principal point of interest in this case, which presents itself to my mind is this: That a phlebitis should occur as

late as the thirteenth day after confinement; and that, beginning in the femoral veins, it should immediately extend to the peri-uterine veins, and result in such severe inflammation as to cause the formation of an extensive pelvic abscess. That this was the case, I feel certain; and in this view both Drs. Barker and Lee thoroughly coincided.

Another interesting point is the fact that, by the most unremitting care and constant attention, the patient was carried along for two months, even after it seemed inevitable that she must succumb, and that her subsequent death is more especially attributable to the excessive heat of the summer and its depressing influences than to any direct effect of the disease itself. I much regret that I am unable to present the specimens of the uterus and its appendages."

DR. CHAMBERLAIN asked what was the explanation of the very marked anæmia. It seemed to him to have come on without apparent cause.

DR. LEE thought that in some cases of phlebitis the nerves of the stomach are affected by the poison, and no digestion takes place. In this case, however, food was freely given, and digestion seemed to go on undisturbed. He had seen the case, and the anæmia was even more marked than Dr. Janvrin had described it, especially the cerebral anæmia.

DR. GILLETTE had also seen a case of phlebitis in which the anæmia was extreme. In the first labor the perineum had been ruptured; it was restored by a secondary operation, but was again torn in the second labor. Phlebitis and cellulitis followed, resulting in suppuration. The pus was aspirated through the abdominal walls, and the patient recovered. Here the anæmia was one of the most marked signs.

CASE OF HYSTERO-NEUROSIS OF THE STOMACH.

DR. WM. M. CHAMBERLAIN said that he had been struck with the title of a paper read by Dr. George J. Engelmann, of St. Louis, at the recent meeting of the Amer. Gynecological Society, viz.: "Menstrual Hystero-Neurosis of the Stomach." It was a most appropriate appellation, and applied very well to a case which he had recently seen.

The patient was 30 years of age, married, had one child five years old, since the birth of which she had had symptoms of uterine disease. During gestation the nausea and vomiting had been excessive, and pelvic neuralgia succeeded them. Two years ago she had gastric trouble, nausea, vomiting, pain in the epigastrium of a boring, burning character. Absolutely no food could be retained. She was kept alive for twenty-seven days

by nutrient enemata. The diagnosis of organic disease of the stomach seemed probable, and was finally accepted as the only sufficient explanation of an irritation so extreme. She improved slowly, and finally got well, except some pelvic symptoms. This spring her physician told her that she had a small uterine fibroma. On the 20th of June last—she is exact about the date—she became pregnant; all the old symptoms were renewed, the pain in the stomach, the non-retention of food, etc., etc.; and she then came under Dr. Chamberlain's care. He found at this time the uterus reaching up to the umbilicus, much too large for the second month; also hypertrophy of the intravaginal portion of the cervix; and in the neck a small fibroid, as large as a small horse-chestnut, forming a sort of ball-valve to the cervical canal. It was attached anteriorly. There was also a hard lump on the left side of the cervix, which might have been another fibroid. He proposed the induction of abortion for the relief of her condition, and passed a dilator and then three tents. This was at 11 A. M.; at 7 P. M. the vomiting, pain, and all symptoms had ceased. They began to diminish in two hours, and in five hours she ate a hearty meal. The uterus was now found to measure $6\frac{1}{2}$ " in length. Ergot was given, and delivery accomplished. With every uterine pain all the old symptoms came on, nausea, gastralgia, etc. The lady is now perfectly well. This case is interesting, as showing the effect of reflex action. The old trouble two years ago was undoubtedly uterine in its origin. The point of irritation was probably the os internum. When this was closed, the stomach trouble came on. Although the patient was only two months advanced when abortion was performed, the amount of secundines passed was immense, thirty times at least the size of the fœtus. The extremities of the fœtus were recognizable.

In reply to a question by Dr. Mundé, why he had persisted in performing abortion after the relief obtained by the simple dilatation, Dr. Chamberlain said that the reasons were, the great size of the uterus, the presence of the tumor, and the fact that the integrity of the fœtus was already compromised. He had gone too far to recede.

Stated Meeting, October 3d, 1876.

DR. JOHN BYRNE *in the Chair*

DR. JAMES S. GREEN reported a

CASE OF STRANGULATION OF THE SMALL INTESTINE IN UTERO-RECTAL ADHESIONS,

in which the post-mortem revealed the following state of

affairs : A knuckle of about four inches of ileum (some six feet from the ileo-cæcal valve) had passed into Douglas' cul-de-sac, through a slit in the centre of a broad ligamentous adhesion, extending from the fundus uteri to the rectum, and had become strangulated there. The cause of the hernia, if it may so be termed, was undoubtedly the exertion of lifting a heavy tub. The diagnosis of intussusception had been made ; but the seat of the strangulation could not, of course, be determined. A vaginal examination might very probably have permitted the detection of the prolapsed intestine behind the uterus, and of course pointed out the necessity of operative interference—gastrotomy. The inference is, therefore, that in cases of probable or certain intussusception in women a vaginal examination should always be made, as possibly affording a means of diagnosis of the site of the stricture and conveying a hint for its relief.

DR. PEASLEE related a case of pelvic abscess in which the pus was evacuated through the rectum, and also through the substance of the supravaginal portion of the cervix into the cavity of the uterus. Defecation took place through the vagina. An operation was attempted, and proved exceedingly difficult ; it succeeded in accomplishing about one-half of what was intended. A second operation was performed. The patient did well for a few days, then vomiting, prostration, and other symptoms of intestinal strangulation came on, the seat of which, however, was dubious. The patient died ; and at the autopsy a firm fibrous band, like a knitting-needle, was found stretching from the posterior surface of the ascending colon to the back of the abdominal cavity, forming a loop about 1" in diameter ; through this loop about fifteen inches of the ascending and descending colon had slipped and become strangulated. This occurrence was merely coincident with the operation, but of course had no connection whatever with it, in the light of cause and effect. Had it been recognized, laparotomy would have been performed. We are now not only justified in performing laparotomy in cases where strangulation is certain or exceedingly probable, and all ordinary means fail, but the operation is then even imperative.

DR. S. BEACH JONES said that he saw a case last January (the lady being the one from whom Dr. T. G. Thomas removed both ovaries in October, 1875, for supposed adenoid degeneration, and saved her life by the transfusion of milk¹) in which laparotomy was performed to relieve urgent symptoms of intestinal strangulation. The intestines were, however, found to be so firmly matted together by carcinomatous degeneration of

¹ See this Journal, Vol. VIII., p. 664.

the peritoneum (numerous small excrecences) as to render their disengagement impracticable. Nevertheless the patient lived five days after the operation.

DR. WALTER R. GILLETTE reported a

CASE OF INTUSSUSCEPTION IN A CHILD NINE MONTHS OLD,

to which he was called on Saturday morning, three weeks previously. He found it vomiting, and attributed it to dentition. As it continued all day, however, he suspected that it might be due to some other cause, which he was as yet unable to find. On the next, Sunday morning, the vomiting became stercoraceous, and the diagnosis of intussusception was made. An enema was given, which brought away only broken-down blood in small quantity, but no feces. The child had had only one large liquid stool previous to this illness, but was usually constipated. On examination, per rectum, a tumor was detected to the left of the umbilicus, which could also be felt through the abdominal walls. Another injection of warm water was given, two quarts of water being forced in from a fountain syringe, but with no avail. A consultation was called, and the injection repeated with a long rectal tube. After two hours (that is, about forty-two hours after he was first called) the doctor returned, intending, in case of need, to inflate the intestine with carbonic acid gas. But the child was found asleep, and the vomiting had ceased. On the next day it was restless, and the enema was repeated. The child then passed feces twice, and with them two shreds of apparently mucous membrane—one inch long by one-eighth inch broad, the other smaller.

DR. CHARLES S. WARD reported a

CASE OF DYSTOCIA CAUSED BY EXTREME ANTEVERSION OF THE
UTERUS AND PENDULOUS ABDOMEN.

The presentation was occipito-anterior, the sagittal suture being in the antero-posterior diameter of the superior strait; the presentation differed, however, from the rule, in that the most dependent portion of the child's head was the lower part of the occiput situated between the posterior fontanelle and the nucha; on this spot the caput succedaneum had formed. This peculiar position was readily explained by the anteversion of the uterus, whereby the foetal vertex was lifted out of the pelvis. The head was drawn with the forceps into the cavity of the pelvis, where it might have been left to be expelled by unaided uterine contractions, had not the absence of these ren

dered it desirable to complete the extraction at once. The membranes had ruptured before the patient was seen by the physicians, or else the malposition might have been rectified by external manipulation, which, however, would have been more or less difficult, owing to the great size of the woman, she weighing nearly two hundred and fifty pounds.

DR. ALEX. J. C. SKENE reported a

CASE OF INTERMITTENT METRORRHAGIA DURING GESTATION,

which he had seen, during the previous week, in the practice of Dr. O. H. Smith, of Williamsburgh. The lady, of strong constitution, mother of seven children, conceived about seven months ago; during the third month hemorrhage from the uterus commenced, which continued, with irregular intermissions, up to within a week ago. The flow was almost always more profuse at night, and quite inconsiderable during the daytime, generally diminishing as soon as the lady arose. As the patient was becoming decidedly anæmic, and there was some doubt as to whether pregnancy really existed or not, the abdomen not corresponding in size to the alleged period of pregnancy, being scarcely as large as at the fifth month, it was decided to ascertain the exact condition, and, if advisable, bring on premature delivery. The os was soft, the sound passed up easily, and struck an elastic body 3'' up. A sponge-tent was introduced and left *in situ* until the next day, when the pulse was found at 130, the temperature 102°. The tent was removed, and pregnancy found to exist. The intact membranes were ruptured and the decomposed fœtus removed as well as a portion of the placenta. The fœtal head was detached during the operation, and remained in the uterus, to be expelled during the night. The next day the pulse was 101, the temperature 99°. A good recovery was made. There had been no uterine contractions whatever perceptible during pregnancy, and no adequate explanation could be given for the peculiar character of the hemorrhage.

DR. PEASLEE related two cases of intermittent hemorrhage during pregnancy, the sanguineous discharge coming on at intervals of from two to four weeks. In neither case were there uterine contractions. One case went on to the sixth month; no quickening occurred. Finally, signs of septicæmia, stupor, dry, furred tongue, fever, made their appearance. The cervix was dilated by a sponge-tent, and a decomposed fœtus of about three months and a perfectly fresh placenta, corresponding to the sixth month, were removed. The placenta was entirely adherent, and had evidently continued growing after the death of

the foetus. In cases of this kind the placenta probably becomes detached little by little previous to each attack of hemorrhage. It depends on the place of attachment whether the bleeding occurs in standing or lying.

DR. PAUL F. MUNDÉ related a

CASE OF TWINS; BOTH CHILDREN DECOMPOSED; RETENTION OF THE SECOND CHILD AND BOTH PLACENTÆ FOR TWO DAYS AFTER THE BIRTH OF THE FIRST CHILD.

"While on a short vacation in Pennsylvania, I was called, a week ago to-day, by the physician in attendance to see a woman with the following history: About a month previously, in consequence of a severe fall, the foetal motions became weaker and then ceased entirely, the pregnancy being then about seven and a half months advanced. On the Saturday previous to the day on which I first saw her, this being Tuesday, labor-pains came on, which, on the next morning, Sunday, about eight o'clock, expelled a nearly full-grown, macerated, exceedingly offensive foetus, which had evidently been dead for some time. An examination now revealed the presence of a second bag of waters and a second child in foot presentation, the expulsion of which, however, owing to the almost entire absence of uterine contractions, did not take place till two A. M. on the following Tuesday (that is, eight hours before I saw her), and then only with the active assistance of the physician. The placenta had not come away, notwithstanding repeated efforts on the part of the attending physician to remove it by expression and traction on the cord and the administration of ergot. Several attempts to introduce the hand into the uterus had failed on account of the contraction of the internal os, and the unwillingness of the patient to remain quiet and submit to the manipulations.

When I was first sent for, I was unable to go at once, and therefore sent word to inject the umbilical vein with as much ice-water as could be forced into it, with the intention of thus detaching the adhesions, and exciting uterine contractions. On arriving, two hours later, I found that this measure, which had served me admirably in a number of instances, had also failed. The patient's face had a peculiar, sunken, anxious expression, her tongue was brown, and furred in the centre and red on the edge, but the temperature normal to the touch and the pulse only 92. The room was almost unbearable with an exceedingly offensive, putrid odor, emanating partly from the vagina of the patient and partly from the decomposed second child, which was immediately removed. Only one cord protruded

from the vagina, the other having been removed during the previous futile efforts at extraction. The uterus reached to the umbilicus, and was soft and flabby, showing no reaction to friction and compression. A distinct prominence and fulness of the right side led me to infer that the placenta was attached to the right uterine horn. I passed my right hand into the vagina, and, on entering the cervix, found the internal os only sufficiently open to admit one finger. By gradually passing in one finger after the other, I finally succeeded in dilating the os and introducing the whole hand into the flabby cavity of the uterus. Here an indistinct placental mass was found, which, being grasped and conducted through the os, was found on removal to be a placenta without a cord; the cord still projecting from the vagina showed that another placenta was still in the uterus. The hand was reintroduced, and the second placenta found partly adherent by broad ligamentous attachments to the right horn of the uterus. These attachments were separated by the fingernails, and this placenta also removed. On examination, the first placenta was found to be in a high state of decomposition, and exceedingly offensive, the second only partially so, the adherent portion being quite fresh and not discolored. The evident length of time which had passed since the detachment of the whole of the first and a portion of the second placenta, without the occurrence of hemorrhage, rendered it probable that the utero-placental vessels had become thrombosed and that no flooding would ensue, which proved to be the case. The uterine cavity was injected with cold water and vinegar, that being the only disinfecting fluid at hand. As might be supposed, this weak application by no means removed the intolerable fetor of the uterine discharge, which surpassed anything of the kind I have ever experienced. Directions were given to inject the uterus every two hours during that day with a two per cent. solution of carbolic acid, and to insure thorough disinfection and ventilation of the apartment; also to give several doses of extr. fl. ergot with extr. fl. trillii latifolii (beth-root), which was at hand, and grs. xv. of quinine, with plenty of milk-punch in the course of the next twenty-four hours. A rather unfavorable prognosis was given, on account of the great probability of septicæmia; but I have to-day, one week after delivery, received news from the medical attendant that not a single unfavorable symptom has shown itself, and the case is rapidly progressing to convalescence.

There are several points of interest in this case: 1. The length of time (forty-two hours) intervening between the birth of the first and that of the second child; 2, the length of time (fifty-one and eight hours respectively) of the retention of the

two placentaë, of which the first had no doubt been detached since the birth of the child to which it belonged; 3, the escape of the patient from the effects of the absorption of the fetid putrefying fluids contained in her uterus—for certainly if any patient ever was entitled to have septicæmia, this was the one; and, 4, the therapeutical question, whether it would not have been proper, indeed decidedly indicated, to have at once ruptured the membranes of the second child and effected its rapid delivery, and then of both placentaë, as soon as it was discovered, through the condition of the first child, what a foul and dangerous burden the uterus contained. This latter question must, I think, be emphatically answered in the affirmative, even though the second child, enclosed as it was in its separate membranes, should have been found to be alive.”

Stated Meeting, October 17th, 1876.

The President, DR. T. G. THOMAS, in the Chair.

DR. E. NOEGGERATH reported a case of a

NEW OPERATION FOR THE REMOVAL OF THE UTERUS, WITH ITS PERITONEAL ENVELOPE THROUGH THE VAGINA, FOR CARCINOMA.

A fortnight ago he was called to Hoboken, to see a woman who had been bleeding for over a year, during which time her physician had been treating her with the curette for granulations and by various other measures. The hemorrhage had always returned. On passing his finger up to the fundus, Dr. Noeggerath found without doubt that the case was one of carcinoma of the body of the uterus proper. He removed several small pieces, and examined them under the microscope, confirming this diagnosis. It appeared as though the uterus still had a certain degree of mobility, and it therefore occurred to him to endeavor to remove the whole uterus entire, and thus to give the patient her only chance of recovery. The patient and her husband consented to the operation. His idea was first to detach the bladder from the vagina, then to open the posterior cul-de-sac, isolate the broad ligaments and the uterus, pass an écraseur into the peritoneal cavity and around the broad ligaments and Fallopian tubes, and separate the uterus from its attachments, employing two écraseurs if advisable. The uterus was then to be extracted through the vagina, abdominal section being performed only in case it was found impossible to complete the operation *per vias naturales*. The crushing of the lateral uterine attachments by the écraseur-wire would obviate all danger of hemorrhage.

Operation.—An incision with the galvanic knife was made into the anterior vaginal wall, a steel sound passed in, and the bladder separated from the anterior wall of the uterus, which succeeded with amazing facility. Ellinger's steel two-branched dilator was then introduced, and the uterus entirely separated from its anterior attachments, and the peritoneal cavity opened. The posterior cul-de-sac was then opened with the galvanic knife also. The index fingers of each hand could then easily be passed up in front of and behind the uterus and made to meet above the fundus, where they were separated only by the broad ligaments. Both ligaments were found hard and infiltrated, rendering an extraction of the uterus through the vagina a difficult undertaking. The abdominal cavity was therefore opened, and Péan's wire constrictor passed in, and the broad ligaments and tubes constricted. The hemorrhage was exceedingly slight. The operation lasted sixty-five minutes. On the next day the pulse was 120, temperature 102°, no peritonitis. On the third day gradual collapse, and death on the fourth day from slow septicæmia. The uterus was found almost entirely detached at the autopsy, the wires having nearly cut through the constricted uterine attachments.

This is the first operation of the kind. It would be valuable in carcinoma of the neck only, even where the infiltration has passed above the infra-vaginal neck, in which case all of the neck, as far up as the absolutely healthy tissue, might be removed per vaginam with the écraseur, after dissecting off the bladder in front and the loosely attached peritoneum behind.

In answer to a question by Dr. Thomas, Dr. Noeggerath said that, to prevent prolapse of the intestines after recovery from this operation, he would sew up the roof of the vagina, until firm cicatrization had taken place; also by raising the foot of the bed, as suggested by Dr. Thomas.

Dr. THOMAS mentioned a French surgeon, who had excised the body of the uterus for carcinoma, drawing down the organ as far as possible, and leaving only as much of the body as appeared sound. Dr. Sims has also long been in the habit, after removing the cervix, of drawing down the uterus in the same manner, and excising the corpus, piece by piece, with knife and scissors, until he has reached healthy tissue and perhaps only a mere shell of the uterus is left. The hemorrhage is controlled by pressure and temporarily packing the cavity with cotton.

Dr. MUNDÉ referred to a case reported by Dr. Alex. Patterson, of Glasgow (*Glasgow Med. Jour.*, Jan., 1876), of successful removal of the whole prolapsed uterus by an operation very similar to that performed by Dr. Noeggerath. Basing on a

case of his own, reported in the AMER. JOUR. OF OBSTETRICS, for August, 1872, in which the whole uterus (at least what was left of it, fundus and body) sloughed out after the operation of curetting and applying chromic acid for cancer of the cervix, Dr. Mundé asked whether, in case of relaxation of the connective tissue attachments between the uterus and peritoneum, it might not be possible to peel the uterus out of its peritoneal envelope without opening the peritoneal cavity.

DR. NOEGGERATH replied that, in certain abnormally relaxed cases, it might be possible; in the normal or ordinary condition, never. In this opinion Drs. Peaslee and Thomas concurred.

The annual election of officers was held, and the following gentlemen were elected:

President: Dr. T. G. THOMAS.

Vice-Presidents: 1st, Dr. Alex. J. C. SKENE; 2d, Dr. J. FOSTER JENKINS.

Recording Secretary: Dr. MATTHEW D. MANN.¹

Treasurer: Dr. G. S. WINSTON.

Corresponding Secretary: Dr. E. NOEGGERATH.

The President appointed the following regular committees:

Committee on Admissions: Drs. Pallen, Hanks, Watts.

Committee on Publication: Drs. Mundé, Chamberlain, Mann.

Stated Meeting, November 7th, 1876.

The President, Dr. T. G. THOMAS, in the Chair.

Dr. CLEMENT CLEVELAND reported a

CASE OF RETROVERSION OF THE UTERUS, COMPLICATED BY ADHESIONS AND PROLAPSE OF THE LEFT OVARY.

"On November 3d, 1875, Miss E., of a neighboring State, consulted me.

The history of her case is as follows:

She was twenty-four years of age, and unmarried; a brunette of short stature. Her menstrual life began at fifteen. For the first few months the catamenia were irregular and attended with much local discomfort. After they were thoroughly established, however, they became perfectly normal, and remained so for four years. During that time she was in vigorous health and enjoying life, as a plenty of means enabled her to do. In 1869 she went abroad, and in October of that year,

¹ Dr. Mundé having declined renomination.

while journeying on horseback towards Gibraltar, with a party of friends, she was thrown, and struck upon the buttocks. She was confined to her room only for a few days, but thinks that from this time she began to be conscious that something was wrong. In the course of a few months she began to have constant pain in the lower part of the back. Her menses began to be a little irregular and attended with pain. There was leucorrhœa; but this was not constant. She had sought the advice of physicians; but nothing further than the administration of drugs had been done for her. A vaginal examination had never been made. She had been under the care latterly of a female physician—a very reputable woman, by the way, who seemed to think that all her ills would be relieved by marriage.

Her present symptoms were briefly these: She was still suffering from the constant pain in the back. One of the banes of her existence was obstinate constipation, with now and then tenesmus; there was leucorrhœa, but this was not profuse nor constant; there was dysmenorrhœa, not marked; nausea always attended any fatigue; she suffered much from torpid circulation.

Bi-manual examination revealed complete retroversion, with prolapsed and very sensitive left ovary. Examination on side with Sims' speculum disclosed the cervix lying against the anterior wall of the vagina. The probe verified the diagnosis of position. Placing the patient in knee and chest position, lifting the perineum with the speculum, in addition to the pneumatic, I made pressure against the fundus with a sponge probang bent in the pelvic curve, hoping in this way to replace the organ. But I was not successful. I then placed her on the side, and attempted to replace with Emmet's repositor. With this I also failed. On more careful bi-manual examination the evidences of adhesions were unmistakable. Nothing further was done for a week, except the use of hot vaginal injections twice daily.

On Nov. 10th I introduced a small-sized Thomas' modification of Cutter's pessary, which I taught her to use herself, instructing her to remove it at night and replace it in the morning. I saw her two days later. She had worn the instrument with no discomfort, save a little chafing between the buttocks. At the end of a week I found I could use the next larger sized pessary. This she wore during the next two weeks, but not without a great deal of discomfort, from excoriation between the buttocks, which I attempted to prevent in various ways, without much success. Fortunately, at the end of this time the uterus was in its normal position, and consequently, on Nov. 29th, I introduced a bulb-retroversion pessary, Thomas' modi-

fication of Albert Smith's. She was now directed to use hot water injections once a day. Nov. 30th she returned, saying that when she went to stool the pessary was forced out, and that she had had sharp pain in the left side, accompanied with nausea. I changed the curve of the pessary a little, with the idea of avoiding the ovary—pressure upon which was evidently the cause of the pain and nausea.

I saw her next on Dec. 9th. She had had her menses meantime. The pessary had been forced out as before, and the pain in the ovary was the same.

The hollow of the sacrum was shallow. The escape of the pessary may have been due to that or to adhesions to the rectum. I was unable to determine which. I then took a larger pessary and one narrower at the bulb, and bent it as taught by Dr. Thomas for use in such cases. The idea is to so bend the pessary that the short-arm of the lever will lie behind the symphysis pubis, rather than under it, and so that the long arm will follow the pelvic curve. Then the posterior wall acting as a fulcrum, when a force is brought to bear upon the bulb in the line of the pelvic curve, the short arm will be tilted up behind the symphysis, instead of being forced through the vaginal orifice. The accompanying diagrams will perhaps explain more clearly these points.

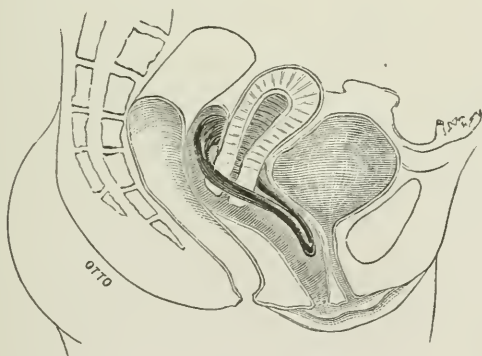


FIG. 1.

In Fig. 1 the pessary shaped in the usual way is represented. Here a force applied to the bulb, in line of the axis of the pelvis, would evidently tend to throw the short arm out of the vagina.

In Fig. 2 is the pessary shaped in the way I have described. A force applied downwards to the bulb would force the larger

curve of the pessary against the posterior wall of the vagina, thus tilting the short arm up behind the symphysis, which would act as a barrier against its escape.

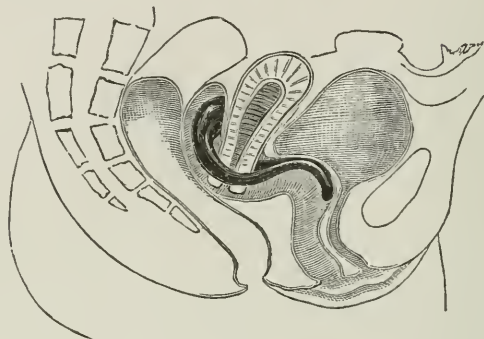


FIG. 2.

This pessary she wore several weeks, with entire relief of most of the symptoms. The pain in the back disappeared and also the leucorrhœa. At the next menses there was no dysmenorrhœa. There continued, however, irritability of the left ovary. The pessary was never forced out at stool. On January 3d she accompanied a friend to Bay Ridge, L. I., and returned again the same day. It was intensely cold, and the journey was wholly by horse-cars. Late in the evening she sent for me. I found her in a high fever, temperature 103° , and suffering violent paroxysms of pain in the left side of the pelvis. She had removed the pessary. On examination I found the vagina hot and congested, the prolapsed ovary very much enlarged and intensely sensitive. I immediately ordered the injection of a gallon of hot water into the vagina, the hot water-bag to be placed over the hypogastrium and suppositories, containing one-fourth gr. each of morphia and belladonna. The tendency to severe inflammation was allayed, though the ovary continued very sensitive. On January 11th I again introduced the pessary; but she was obliged to remove it the next day, as it still irritated the ovary.

For the next month, at intervals, I tried various forms of pessaries, which I devised to avoid direct pressure upon the prolapsed ovary. But they all failed to accomplish that end, and I was obliged to return to the pessary she had worn with the most comfort.

Knowing that Dr. Thomas had been successful with just such cases, I determined to consult him; and accordingly, on Feb.

15th, I took my patient to his office. On examination he found that the uterus was held perfectly in position, with the ovary lying between the pessary and the wall of the pelvis. Placing the patient upon the side, he removed the pessary and replaced the ovary. He then introduced a pessary two and one-quarter inches across the bulb, but shaped with the usual curves. This succeeded perfectly in preventing the ovary from falling. It could not fall, because there was no space left for it to fall into. But the instrument could be worn only for a few hours. It was a little too wide, and gave her such violent pain I was forced to remove it. On the next day, Feb. 16th, I reintroduced the pessary; but the same result followed—the pain was too severe to admit of her wearing it.

She then went without treatment for a week, when I replaced the original pessary. At this time she was called to her home, and all treatment was suspended for several months. She continued to wear the pessary, however, though it still irritated the ovary, preferring to do so rather than to suffer from her old ills. I was somewhat in hopes, too, that the ovary would become tolerant of the instrument. She found, by taking very little exercise and keeping free from excitement, that she could get along tolerably well. I did not see her again till the early part of July, when she was suffering much from irritation of the ovary. Following out Dr. Thomas' idea, I then introduced a pessary only three-eighths of an inch narrower at the bulb than the one he had used, and shaped in the way I have described above. The result was complete relief. She was entirely rid of every distress, and is now, Nov. 1st, completely restored to health and strength—still, of course, wearing the pessary.

I have heard many a man declare that he did not know how to manage such cases. But it would seem that all difficulty, in most of them, would vanish by the use of pessaries broad enough to keep the ovary suspended, or broad enough to leave no space for it to fall into."

CASE OF DEATH FROM RUPTURE OF THE FALLOPIAN TUBE AND
INTRAPERITONEAL HEMORRHAGE.

DR. HENRY D. NICOLL presented the specimen of a uterus with appendages taken from a lady, 30 years of age, who had been suffering from retroversion for several years past. Two years ago her first child was born, ten months ago her second—both labors being normal. The last child was not nursed. Her last menstruation occurred two weeks before her death, and was scanty. Since that time she had had slight abdominal pains. On the morning of her death, immediately after sexual intercourse, she experienced a sudden violent pain in the lower

part of the abdomen, followed by syncope. When Dr. Nicoll saw her soon afterwards she was unconscious, and pulseless at the wrist. A vaginal examination revealed quite distinct fluctuation in Douglas' cul-de-sac, which induced Dr. Nicoll to think it a case of hæmatocele. Restoratives were applied, and the patient soon rallied somewhat from her prostration. The doctor then left her, and returned in less than an hour, when the husband informed him that the patient had again fainted almost immediately after his departure. He found her in an extreme state of collapse and pulseless. All restoratives were ineffectual, and she died in six hours, being twelve hours after her first attack.

Dr. Nicoll being prevented, the autopsy was performed by Dr. F. R. S. Drake.

The abdominal cavity was found absolutely filled with blood, chiefly in a coagulated state. The viscera were perfectly anæmic. The uterus was large, and its mucous membrane presented a moderately tumefied appearance. The ovaries were very large and flat, and contained each a corpus luteum. Within half an inch of the junction of the left Fallopian tube and the uterus, was a rounded swelling the size of a hazelnut, with a ragged opening on its posterior aspect. The tube at this point contained what appeared to be a firm coagulum.

Dr. Nicoll thought that the history pointed to the occurrence of an early tubal pregnancy with rupture of the sac. The specimen was referred to the pathologist for further examination and report.

Commenting on the diagnosis of hæmatocele originally made by Dr. Nicoll, DR. NOEGGERATH said, that according to Gallard, 80 or 90 per cent. of hæmatoceles are owing to the rupture of the sac in tubal pregnancies; and that consequently, if Dr. Nicoll's view of the case is correct, the term hæmatocele is a proper one to apply to this case.

The Pathologist, Dr. M. D. MANN (at a subsequent meeting, Dec. 5th) presented the following report on the specimen.

"The specimen, as it came into my hands, consisted of the uterus, tubes, ovaries, and portions of the broad and round ligaments, and had been hardened in alcohol.

The Uterus measured three and a half inches in length, and nearly two and a half in breadth at the insertion of the round ligaments. The cervical canal from os to os was exactly one inch in length, and was filled with a plug of thick, tenacious, and jelly-like mucus. The muscular walls of the body, exclusive of the mucous membrane, measured at the fundus three-quarters of an inch, and in the middle of the anterior wall one-half inch in thickness. The mucous membrane was very rough

and ragged in appearance, presenting a number of folds and tongue-like processes over its whole surface. In thickness it measured only about two lines in its thickest portion, half way between the fundus and the os internum.

On microscopic examination, it showed the cells of the interglandular substance to be about the size of those found in the inter-menstrual period. The follicles were very difficult to find, as they had lost their epithelium, but appeared to be generally nearly straight.

The Ovaries were large, flat, very firm, and presented a number of cicatrices and deep creases on their external surfaces. They measured, the right two inches in its longest diameter by one and a half inches in its shortest, and about one-half an inch in thickness. The left was more nearly circular, and was two inches by one and three-quarters, and one-half an inch thick. The left ovary contained a flattened corpus luteum one-half an inch in diameter, which had nearly lost its color, and contained no trace of a clot. There was a cicatrix corresponding to the most external point of the corpus luteum.

The microscopic examination showed little but condensed connective tissue; there being no epithelium in any of the Graafian follicles.

The Tubes.—The right seemed to be normal in its whole extent and quite permeable. The left tube presented, near its junction with the uterus, a spherical enlargement, which seemed to expand the tube equally in all directions. It measured three-quarters of an inch in the axis of the tube, and one-half inch in its other diameter. It was very much discolored, being nearly black, and presented at its posterior surface a slightly ragged but nearly circular opening about three lines in diameter. Through this opening could be seen a firm blood-clot, which appeared to fill the whole cavity of the sac.

On making a transverse section and turning out the clot, I found the sac to consist of two coats—an external or peritoneal, and an inner or muscular. There was no trace of any other membrane or sac, except near where the distal end of the tube entered the sac, a small ribbon-shaped membrane was found, having at its connected end and on its anterior aspect a small opening. This proved to be the entrance to the Fallopian tube, which was open throughout its whole extent, but not at all dilated. This piece of membrane then undoubtedly represented all that was left of the mucous coat of the tube. The uterine mouths of both tubes were open, but I was unable to find any passage between the uterine cavity and the cavity of the cyst. The vessels in the left *broad*

ligament were larger and more numerous than those of the right.

Diagnosis.—We are forced, by the resemblance of this to other described cases, by the presence of the corpus luteum, and by exclusion, to consider this as a case of tubal pregnancy.

The absence of the ovum, and the failure in the development of the uteri decidua, usually seen in these cases, may cast some doubts on the diagnosis. But we can easily account for the absence of the ovum by supposing that it was expelled through the rent in the walls of the sac at the time of the hemorrhage, and lost among the clots. There being no decidua around the ovum in these cases, the connection between the chorion and the surrounding tissues is always very slight, and the force of the blood would be quite sufficient to detach and carry away the ovum.

The low development of the uterine mucous membrane may be accounted for, in part, by the very early stage of the pregnancy, and by the previous abnormal condition of the uterus.

We cannot image any other conditions which could have produced similar results. Disease of a vessel, with apoplexy, an ulcerative action in the mucous membrane opening into a vessel, formation of an abscess in the tube, with subsequent rupture, are all easily excluded. The process must have been a gradual one, for we have an equitable distention and thinning of the musculature and peritoneum of the tube. The other tube and the remaining portions of this tube are, moreover, quite healthy—facts which would exclude the condition which I have supposed.

The specimen and history are certainly most interesting and instructive."

CASE OF CANCER OF THE FEMALE URETHRA.

DR. T. G. THOMAS presented a tumor removed from a married lady, 29 years of age, who, two months ago, noticed a pinkish discharge from the vagina, which gradually increased almost to a hemorrhage. She noticed a growth occupying the ostium vaginae. On examination, the doctor found a tumor, the size of an English walnut, projecting from the urethra, the appearance of which led him to pronounce it a cancer. He stated the nature of the growth to the friends of the patient, and they, with the approval of the family physician, insisted on its removal. Although he had doubts as to the propriety of the operation, fearing incontinence of urine for the rest of the patient's life, and questioning the probability of the cure of the disease, he finally consented to the operation. The tumor was removed, together with the whole urethra from which it sprang,

by galvano-cautery. The specimen was examined by Dr. Francis Delafield, who pronounced it a true carcinoma. The patient, who has not left her bed, still has retentive power over the urine, but will probably lose it when she rises.

DR. NOEGGERATH thought that the patient would regain control over her bladder sooner or later, provided not much of the sphincter had been removed. Cases of extraction of large stones through the female urethra prove this to be the rule.

DR. THOMAS thought that none of the sphincter had been removed in this case.

At the meeting, Dec. 21st, DR. THOMAS reported that the patient had left her bed, and even undertaken a short journey, and had perfect control of her bladder.

DR. JAMES S. GREEN reported a

CASE OF TETANIE, OR INTERMITTENT TETANUS.

"On March 6, 1876, I was called to meet in consultation Dr. J. Otis Pinneo, of Elizabeth, N. J. The patient, Jennie A—, four years of age, was a delicate child, of scrofulous diathesis, and had enjoyed good health from birth until two years ago last winter, when she had an attack of laryngitis, involving the upper portion of the larynx. This was followed by a bronchitis, which ran a slow course, and left the child in the spring weak. During the following summer she developed a catarrh of the stomach and intestines which has never entirely left her, rendering her digestive functions very irregular and requiring constant watchfulness as to her diet. Doctor Pinneo was called to see her at 8.30 A.M. of the day of our consultation, and found that two days previously the child had had one of her attacks of diarrhoea, following, as her parents supposed, some indiscretion in diet. This had been checked, and she had had a natural movement that morning. She had, however, complained, the day previously, of her feet hurting her when she tried to walk, and felt relief from pain when she placed them upon a cold surface, as the oil-cloth or the marble of the hearth of the fireplace. She had slept well during the night, but awaked in the morning, at 7.30, with violent cramps in her feet and legs, hands, fingers, and forearms. Doctor Pinneo prescribed an anodyne, warm-bath and frictions to the limbs.

I saw the patient at 10.30 A.M. The spasms of the limbs were tetanic in their character, recurring at intervals of from two to five minutes, the thumbs fixed on the palms and carried through the space between the second and ring fingers, the borders of the hands approximated, the hands strongly flexed on the forearms,

and drawn towards the ulnar side of the arm. The toes were drawn down to the bottom of the feet and the feet bent towards the inner surface of the legs. This position of the feet and hands was, in a great measure, maintained during the intermissions of the spasms, though much increased at the time of the convulsive movement. Once the muscles of the trunk were affected and there was a decided tendency to opisthotonus, which did not recur. The respiratory and masticatory muscles were not involved. No head symptoms were present from the first. The intellect and intelligence of the child was perfect throughout; while the paroxysm was upon her, the pain was most exquisite; but during the interval she suffered no pain, although the limbs were much contorted.

The parents of the child, who were educated and very intelligent persons, could assign no cause for this peculiar attack; no injury, no error in diet, no exposure to cold.

A thorough examination of the surface of the patient could discover no reason to believe that there was a peripheral seat of irritation. And upon consultation it was determined that the cause of the difficulty was, in all probability, in the stomach and intestines; and for the purpose of eliminating the intestinal track from consideration, a large dose of calomel (15 grains) was given and chloroform administered by inhalation to control the convulsive movements meanwhile.

The use of the chloroform was continued for six hours, and relieved the pain and spasm perfectly, when an enema opened the way for the purgative action of the calomel. About this time Doctor Pinneo gave one drop of Squibb's fluid extract cannabis indica, equal to one-eighth of a grain of solid extract, every two hours.

About half an hour after the use of the enema, there was a free evacuation of the bowels of a natural character. The following morning, however, the patient had two most peculiarly looking stools, which consisted of a quantity of fluid excretion, in which floated a large number of little balls, that looked like mucous membrane, and attached to each mass was a fringy surface which floated in the fluid matter. There were at least one hundred of these little bodies in each stool. No opportunity was offered to examine these masses with care, as they were thrown away by a stupid servant.

After the thorough evacuations of the intestinal track, there were no more spasmodic movements, though the contracted condition of the flexors did not give way for forty-eight hours.

Twice since (within a month of this attack) she has had an indication of trouble of same kind; but three or four drops of the preparation of Indian hemp have quieted the symptoms, so

that a sleep of an hour or two seemed to drive off the threatened attack. There has been return of the peculiar discharge from the bowels."

DR. JOHN G. PERRY asked if the patient lived in a malarious district, and, on Dr. Green's answering in the affirmative, said that he had seen several such cases due to malaria, but none so severe. Handfield Jones is the only author he has found to refer to this as a cause of the disease. Dr. Perry had also given calomel followed by *cannabis indica*.

DR. GREEN replied that the patient had lived in the same locality since, and had had no return of the disease; hence he did not think it to be due to malaria.

DR. MARY PUTNAM-JACOBI, being called upon by the President, said that she had seen three cases connected with trismus glottidis in the Paris hospitals, which was there supposed to be quite a common complication of the affection.

DR. T. G. THOMAS made a

REPORT ON THE TREATMENT OF SOLID UTERINE FIBROIDS BY ELECTROLYSIS, BY DRs. GILMAN KIMBALL, OF LOWELL, AND EPHRAIM CUTTER, OF BOSTON, MASS.

Eight months ago Dr. Cutter told Dr. Thomas that Dr. Kimball and he had for some time been treating large uterine fibroids by electrolysis, and invited him to witness the operation. Three cases having been collected, Dr. Thomas went on to Boston a week previously for this purpose. Of the three cases one only was subjected to the operation, the other two having unexpectedly begun to menstruate.

The patient, a negress, 35 years of age, had a large multilobar fibroid, corresponding in size to the eighth month of pregnancy. She had already been three times operated on by electrolysis. The electrodes used were stylets, seven and one-half inches in length, including the handle, gutter-shaped, so as to increase their surface and strength. No ether or opium were given. One electrode was introduced to the depth of four inches, in an oblique downward direction above the umbilicus; the other below it, and connected with the battery for fifteen minutes. The skin was protected by a non-conducting varnish on the upper part of the stylet. The electrodes were then withdrawn and again introduced, one on each side of the median line, and the battery again turned on for fifteen minutes. The carbon electrode, on being withdrawn, came out without difficulty—the zinc electrode, however, only with the exercise of a large amount of force. The pulse was in no way affected, and no reaction followed the operation. Six days later the patient went down-stairs to her meals.

The following is a synopsis of thirty-six cases operated on in this manner during the past six years, in the language of the operators themselves:

Battery.—Eight pairs carbon and zinc plates, six by nine inches. Electrodes specially invented for this operation, and designed for the certain and controllable penetration of dense fibroids. Length over all, seven and one-half inches; blade, five and one-half inches—*Cutter*. Method of puncture—*Kimball*.

Time consumed by operation in passage of constant current, three to fifteen minutes.

Design.—Simply hoped to arrest further development.

Number of Applications.—One to nineteen. *Frequency*.—Once every day to once in two months. *Exciting Fluid*.—Saturated solution of potassic bichromate, with sulphuric acid $\bar{5}$ j. to $\bar{5}$ ij.

CASE I.—Reported by Dr. W. S. Brown, of Stoneham, Mass. (*Med. & Surg. Reporter*, Feb. 8, 1873). Myo-fibroid. Application incomplete; no results. Patient dissatisfied.

CASE II.—Very large fibro-myoma, ascites, orthopnœa and general malaise. Tumor diminished; ascites and orthopnœa relieved at once; astonishing flow of urine.

CASE III.—Large tumor; had given up to die. Three operations of three minutes each, followed by entire disappearance and permanent cure.

CASE IV.—Large tumor; growth arrested; not diminished. Patient much relieved.

CASE V.—Large tumor. Diminished one-half.

CASE VI.—Large fibro-myoma. Arrested for two years, and then remarkably diminished; many applications.

CASE VII.—Large tumor. Patient bed-ridden. After two applications, very much diminished, with such relief that she was able to be up and about the house. In a week's time she rode out in a carriage comfortably, and was able to go about anywhere in the town. Two years afterwards tumor returned to former size, but the patient was in a good state of health.

CASE VIII.—No effect; tumor proved malignant.

CASE IX.—Peritoneal; no effect. Pedunculated. Afterwards successfully removed by gastrotomy by Kimball.

CASE X.—Peritoneal Tumor large. Fatal case. Extreme exhaustion, with typhoid symptoms. Death occurred four weeks after operation.

CASE XI.—Enormous growth; no impression.

CASE XII.—Enormous growth; not sensibly diminished. Arrested; much relieved. Able to cross her lower limbs and

tie up her shoes—both of which were impossible before electrolysis.

CASE XIII.—Large tumor. Sensibly reduced.

CASE XIV.—Large tumor. Sensibly reduced.

CASE XV.—Large tumor. Growth arrested.

CASE XVI.—Enormous. Sensibly reduced.

CASE XVII.—Large tumor. Marked relief; diminished. Could put on her boots, which before she could not.

CASE XVIII.—Small tumor. No relief; not arrested.

CASE XIX.—Large pelvic growth. No relief; not arrested.

CASE XX.—Large growth. Great relief; sensibly reduced.

CASE XXI.—Small tumor. Entirely disappeared.

CASE XXII.—Medium growth. No relief; proved to be malignant.

CASE XXIII.—Enormous growth. Nineteen applications; very much diminished.

CASE XXIV.—Enormous growth. No relief; not arrested.

CASE XXV.—Hopeless case. Tumor very large; ascites and a parietal abscess between umbilicus and pubis. Arrested. Patient asserted great relief.

CASE XXVI.—Medium size; fibro-cystic. Not arrested; no relief.

CASE XXVII.—Single woman, large as a parous woman at term. Now no enlargement is noticed. Obligated to give up teaching; now has resumed it. Pain recurred, and was annulled by one operation.

CASE XXVIII.—Large tumor. Diminished to one-third its former size.

CASE XXIX.—Large multilobar fibro-myoid pelvic. Diminished somewhat. Remarkable relief to pain. Restoration to active life.

CASE XXX.—Multilobar pelvic fibro-myoma. *Fatal*. Died in eleven days, from peritonitis. She was weaker than she appeared. A morphine eater; used 3 j. a week sometimes.

CASE XXXI.—Large multilobar; very dense. Diminished one-third. Softened; ten operations; general health restored.

CASE XXXII.—Enormous multilobar tumor; ascites. Diminished somewhat; dropsy cured; general health improved. In progress.

CASE XXXIII.—Multilobar, large, dense. Diminished somewhat. From a state of dependent invalidism she was enabled to rise to a position of self-support, by her own labor.

CASE XXXIV.—Quite large tumor. Patient an invalid, and had given up her position as house-servant. Diminished; she returned to work for one year, and then died from hemorrhage.

CASE XXXV.—Large pelvic tumor. One operation diminished it one-half. Subsequently it disappeared.

CASE XXXVI.—Fibro-myoma, pelvic, multilobar; one operation, fifteen minutes. Great prostration; skin peeled from hands. Slightly diminished. Perfect relief from constipation of at least ten years' standing, lasting two months. Able to retain urine all night. Great improvement in sleep.

Resumé.—Growths arrested in 26 cases (this counts diminutions and disappearances as arrests); not arrested in 10. Growths diminished, 23; not diminished, 13. Malignant, 2. Fatal, 2. No effect, 4. Disappeared entirely, 3. Large majority relieved.

DR. THOMAS stated, further, that he was informed that the amount of urine passed after each application was enormous in the majority of the cases reported; also occasionally, if the uterus itself was touched by the electrode, a profuse watery discharge took place from its cavity. The tumors were both subperitoneal and interstitial.

One of the cases reported above was seen by Dr. Thomas, who found the tumor to be still very large—indeed it was stated to have been diminished but little in size by the treatment, but as hard as stone, moving about in the abdominal cavity like a ball of plaster-of-Paris; the woman reported that she felt entirely well, and had no trouble whatever from her tumor.

DR. SEMELEDER, who was present as a guest, said that the plates in Dr. Cutter's battery were so arranged that all the zincs were connected and all the carbons, thus making very large surfaces of each element, and that thereby the heating power was increased and the electrolytic action diminished.

He thought the method looked more dangerous than it really was, and that some of the cases reported as unsuccessful, after a few trials, had been given up too soon, as the effect of electrolysis would necessarily be a very gradual one. A continuation of the operation might have resulted in a cure.

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Reported by W. H. H. GITHENS, M.D., Secretary.

Stated Meeting, October 5, 1876.

DR. J. L. LUDLOW, *Vice-President, in the Chair.*

DR. WILLIAM GOODELL stated that, as there appeared to be no paper for the evening, he would relate a

CASE OF STERILITY

which had led him astray in his diagnosis, and had opened up to him a new field of inquiry.

"A strong, healthy, and well-to-do Irishwoman, about thirty years old, sought my professional advice something over a year ago. She complained of dysmenorrhœa and of some leucorrhœa; but it was mainly on account of her sterility that she consulted me. She had been married for nine years without conceiving, and her and her husband's desire for offspring was intense.

I found the usual conical cervix of a nullipara, associated with a minor degree of antelexion and with some stenosis. Placing her under ether, I forcibly straightened out and stretched open the cervical canal with my modification of Ellinger's dilator. This operation, followed by topical treatment, gave absolute relief for some five months. But she did not, however, conceive, and at the end of that time began to have a slight return of pain at her monthly flux. At her earnest request I again etherized her, and forcibly dilated the cervical canal; but still she remained barren. She now so begged and so urged me to perform any operation which would be likely to make her fruitful, that, although the amount of dysmenorrhœa was really not sufficient to warrant such measures, I was debating in my mind whether to slit open the cervix or to amputate it, or to let it alone.

While yet undecided what course to pursue, I received another visit from her, which put matters in a different shape. She told me that her husband had picked up one of those vile pamphlets, which, while pandering to our lowest instincts, serve as advertisements to unscrupulous quacks. From reading its contents, he was led to think that the fault lay on his side and not on his wife's. He accordingly, without her knowledge,

called on the authors of this pamphlet—for they generally hunt in couples—and stated his case to them. They assured him that “his seed was dead,” but offered to restore it to life for the consideration of \$75. This sum he paid down at once, and began a course of treatment consisting of a few shocks from a battery and of more medicine. After two weeks had elapsed, they told him that his case was one needing a far more active treatment than they had at first supposed, and demanded \$75 more. Before paying this additional sum, he made a clean breast to his wife of what he had done; and she at once sent him to me for advice in the matter.

He appeared to be a little older than his wife, was in splendid health, and had since puberty contracted no other disease than a gonorrhœa, which, fifteen years ago, kept him in bed for some days from inflamed testicles. Notwithstanding this, he confessed to vigorous virile powers, and had no complaints to make against his wife on that score.

He was an unusually intelligent man, and I was determined to rescue him out of the hands of these harpies. Having shaken his confidence in them by explaining their old trick of showing under the microscope lively vinegar-eels as a proof of virility restored by their treatment, I sent him with a note to a medical friend, who is acknowledged to be one of our best microscopists. This gentleman obtained a fresh specimen of my patient's semen, and, after examining it with the utmost care, failed to find a single dead or a single living spermatozoon. So amazed was my friend at this unexpected result, that, fearing some source of error on his part, he obtained a second specimen of this semen, and submitted it to other experts besides himself. Yet not a trace of a spermatozoon, living or dead, could be discovered.

This extremely interesting case leads me to think that physicians too often charge the wife with the fault of unfruitfulness, when it lies with the husband. As I look back on my practice I feel conscious of having made this error—an error which can be avoided only by a microscopic examination of the semen. Such a diagnostic procedure is, however, not only somewhat delicate to propose, but repulsive to make. Hence it is that the cervix has so often, as I believe, been unnecessarily incised or dilated or otherwise maltreated. I am also led to think that, in the majority of those cases of unfruitful marriage which have been attributed to a latent gonorrhœa in the woman, it is reasonable to attribute the sterility less to an alleged secondary infection of the wife's organs, than to the primary disorder of the husband's. In the interest of science, then, as well as of humanity, all unfruitful marriages demand

such a means of diagnosis as shall attach the blame where it belongs and without doubt."

Stated Meeting, November 2, 1876.

DR. A. H. SMITH, *called to the Chair.*

FIBROID TUMOR REMOVED BY TRACTION FROM THE UTERUS.

DR. W. GOODELL exhibited the specimen to show the difficulty of diagnosing tumors in the uterine cavity, and the difficulty attending their removal.

An unmarried lady from the country, about forty years old, had been suffering from excessive menorrhagia, and great dysmenorrhœa for seven or eight years. At his first examination, Dr. Goodell discovered, half-way up the cervical canal, a small polypus. This he removed, and, as the sound gave a natural length to the womb, pronounced her cured. She was, however, in no wise improved by the removal of this growth; and returned, after two catamenial periods, profoundly anæmic from the frightful loss of blood. Again he found the womb of the natural length, as measured by the sound; but, owing to a thick layer of fat in the abdominal wall, and to involuntary contractions of the recti muscles, he could not make a satisfactory digital examination. Although the passage of the sound did not produce that hemorrhage so characteristic and diagnostic of polypus, yet he suspected some uterine growth, and tried to induce his patient to have sponge-tents introduced. To this she objected; but her next monthly period was so profuse as to excite her own alarm and that of her physician, and she now submitted to treatment.

Dr. Goodell introduced two sponge-tents, which caused excessive pain. The next day, on their removal, he found that, by passing his finger high up, he could just touch the lower end of an immovable growth. Five of the largest sponge and laminaria tents were now introduced. On the following day, aided by the lady's physician and by Dr. D. Bray, he proceeded, with many misgivings of failure, to remove the tumor. Upon withdrawing the tents, he found the knob of a small interstitial fibroid a little above the internal os, and higher up in the left cornu, a second tumor which projected into the uterine cavity, and which, from its immobility, evidently had a sessile attachment. It was now clear that the sound had impinged on the end of this growth, and that the presence of the interstitial tumor had misled him in regard to the true length of the uterine cavity.

The complication of this interstitial tumor, the refusal of the lady to take an anæsthetic, and the consequent rigidity of the

abdominal muscles, made the operation one of great difficulty. After many failures he managed at last to catch the tumor in the grip of a fenestrated forceps, the blades of which were passed in singly like those of the obstetric forceps. By using very firm and unremitting traction on the tumor, aided by a slight twist on its axis, and by supra-pubic propulsion, he finally succeeded, amid the loud outcries of his patient, in enucleating the fibroid from its bed. It was now found to be of larger bulk than the dilated os, and very nearly as much traction-power was needed to get it through. The tumor proved to be a pear-shaped submucoid fibroid, whose whole base was deeply imbedded in the uterine wall. Considerable hemorrhage took place during the tedious manipulation of the tumor, and more after its removal. Finding it wholly impracticable to attempt the removal of the remaining tumor, Dr. Goodell incised its capsule, swabbed the uterine cavity with a saturated tincture of iodine, and tamponed the vagina. This patient did very well, and within a week after had a natural monthly flux for the first time in eight years.

He further stated that, in another case of sessile growth, owing to the great resistance of the lady, who also stubbornly refused to take ether, he was not able to catch the tumor by forceps or by volsella. In sheer desperation he hooked the nails of two of his fingers into the tumor, and amid the loudest shrieks of his patient, wrenched off the projecting portion flush with the uterine wall. So unexpected was this result to him, that he feared the growth was malignant in character; but Dr. W. F. Jenks, to whom he submitted the specimen, pronounced it strictly fibroid in character. Subsequently the embedded portion of the tumor broke down and came away in putrilage. The lady recovered without a bad symptom, and continued well for nearly a year, when the menorrhagia returned. This time he discovered a cervical polypus of small size. Upon its removal, she again became well and soon after reached the menopause.

DR. J. V. INGHAM thought that Dr. Goodell's remark as to the diagnostic value of hemorrhage following the introduction of the sound was too restrictive, and might lead to error in diagnosis. He remembered two cases of marked hemorrhage following the use of the sound, which was due to a granular condition of the mucous membrane of the uterus. He thought that hemorrhage is common in cases of such an altered condition of the membrane, when the sound is passed.

DR. GOODELL admitted that he constantly saw blood following the use of the sound when there is a congested or a granular condition of the mucous lining of the uterine cavity, but

never in so free a stream as when a polypus is present. It then sometimes flows out as if a vein had been struck by a lancet.

He once had the misfortune to bring on a miscarriage by carelessly introducing the sound in a lady, who did not know she was pregnant. In this case only was the use of the sound attended with as free a hemorrhage as in some cases of polypus he had met with.

DR. W. T. TAYLOR then read the following histories of

TWO CASES OF PUERPERAL CONVULSIONS.

“With regard to the cause of puerperal convulsions, there is a diversity of opinion—some considering them due to albuminuria, and others to hyperæmia of the brain, owing to the congested state of the blood-vessels during gestation and labor.

They occur more frequently in the first than in later pregnancies; but the reason for this has never been satisfactorily explained. The mortality of the disease is very great to both mother and child.

The treatment, however, is what particularly demands our attention. The majority of obstetricians recommend general and local depletion with the use of anæsthetics and opiates—cold to the head, sinapisms and warmth to the extremities, with drastic purgatives and the speedy delivery of the child; although the delivery of the child may depend somewhat on the condition of the mother; for if the os uteri dilates and labor begins, it is right to encourage it, but if the convulsions cease and there is no action on the part of the uterus to empty itself, we are not justified in interfering, but should wait until labor commences, which may be days or even weeks after the convulsions have ceased.

The following case occurred to me this year:

Mrs. Ingram, aged twenty-four years, being in the seventh month of utero-gestation, was œdematous over the whole body, and had severe headache, for which she took bromide of potash and diuretics, which relieved her considerably.

On January 16th she was seized with convulsions, and became unconscious about midnight, when a neighboring physician was called in, who attempted to bleed her, but was unsuccessful.

The convulsions occurred every few minutes; she would turn her head quickly to the *left* side and bite her tongue, so that blood and froth were issuing from her mouth. Her pulse was full and hard, and her face at times congested. She had been in this condition about two hours when I arrived. A leecher had been sent for, who applied leeches to both temples and the

back of the neck, from which the blood flowed freely. Cold water cloths were placed on the head and warmth to the feet. Ether was then given by inhalation, which controlled the fits somewhat; but several hours elapsed before they ceased and she became conscious.

During all this time the os uteri was firmly contracted and showed no signs of labor. She was affected with dimness of vision for several days after; but under the use of diuretics and bromide of potash the dropsical effusion gradually subsided from her limbs and body, and by the help of quinine, iron, and generous diet she soon recovered, and resumed her household duties. Labor, however, did not occur until February 8th, when "the waters broke," and a putrid foetus was expelled from the uterus without any trouble; it was soon followed by the placenta.

Another case occurred to me last month, in which the result was very different.

Mrs. I. Nichols, aged thirty-three years, was in the sixth month of utero-gestation; for several weeks she had been complaining of headache and drowsiness, for which she took an occasional purgative, not thinking it necessary to seek medical advice. On the night of September 18th, about 2 A. M., her husband came to me requesting me to give him something for his wife, who had headache and pain in the stomach; telling me that she was six months pregnant and that he had given her some warm water, which vomited her freely, but that she was not relieved. I ordered a sinapism to the back of the neck and gave her an anodyne of bromide of potash and solution of morphia in camphor-water.

About 6 A. M. he came for me, telling me that Mrs. N. was no better, and that she had had a fit. On reaching the house, which was some distance from mine, I found her lying on the bed in an unconscious condition. Her breathing was stertorous, and her pulse full. On attempting to give her a dose of medicine, she was instantly convulsed, biting her tongue, frothing at the mouth, and jerking her head to the left side, her face becoming quite red. In a few minutes it passed off. Having no lancet with me, I ordered her to be bled, and a dozen or more leeches to be applied to the temples and nape of the neck, with cold to the head and sinapisms to the extremities. The bleeder could get no blood to flow from the arm, but the leeches did well—the blood continuing to flow from their bites nearly all day. I emptied the bladder with a catheter, but it contained very little urine, for she had passed it involuntarily. On examining the os uteri, I found there was no dilatation. Having given her some ether to inhale, the fits were controlled some-

what, occurring only every half hour. Several doses of croton-oil were administered by the mouth, and an injection of castor-oil and turpentine was given; but there was no action of the bowels from either. She kept constantly rolling her head from side to side, and convulsively moving her right arm, whilst the left arm was motionless. When she was not under the influence of ether, the convulsions would return, so that I was obliged to remain constantly at her bedside. During the afternoon the blood commenced oozing from the lancet wound in her arm; but as her insensibility continued, I did not stop it. At 4 P.M. the os began to dilate, but so slowly that I ruptured the membranes to hasten labor. At 7 P.M. Dr. R. Stewart, whom I had called in, attempted to dilate the os with Molesworth's gum dilator, which he filled with water and air; but it would slip up into the body of the uterus, and produced no effect on the cervix; therefore I slowly and gradually pushed my index and middle fingers through the os and cervix, discovering a breech presentation; by continued effort the legs and body were brought down, but it required some time and force to deliver the head and placenta.

During all this time my patient remained unconscious, even when the effect of the anæsthetic had passed off, her left arm being paralyzed.

As she became weak, milk punch was given occasionally, and ether used whenever a convulsion occurred. She expired about midnight. No post-mortem examination was made; but I believe she must have ruptured one of the vessels of the brain, at the very onset of the disease, and consequently our remedies had no effect."

DR. J. M. KEATING suggested the use of jaborandi in cases of convulsions due to uræmia. He referred to its beneficial action in cases of albuminuria depending upon acute disease of the kidney, or upon simply functional disorder not associated with chronic diseases of that organ. The profuse diaphoresis produced by a good article of jaborandi would eliminate urea quickly and in large amounts. The drug can be used either by infusion of the leaves or in the form of fluid extract, or by its active principle pilocarpin. At the Philadelphia Hospital he directed the use of an infusion of $\bar{3}$ j. of the leaves to the pint of water, the patient, in addition, chewing but not swallowing the leaves. Profuse diaphoresis is produced in about fifteen minutes.

DR. GOODELL remarked that he certainly would try jaborandi, if the remedy he had been lately using should fail him. He had given chloral hydrate, in his last six cases, with success. For instance: in one case each convulsion was followed by pro-

longed stertorous breathing. He gave 3 j. of chloral hydrate by injection into the rectum. The convulsions ceased like magic, and the patient slept. In an hour, finding the facial muscles beginning to twitch, he gave another injection of 3 j. The lady slept a number of hours, and awoke well, but without any consciousness of what had passed. The physician who had called him in to this case was so pleased with the effects of the chloral, that he had written to him within the week, describing another very analogous case, which he had treated in precisely the same manner, and with precisely the same good results. He (Dr. G.) had treated five other somewhat similar cases with the chloral hydrate, and had had such good results from its use that he deemed it the remedy *par excellence*. He would combine its use in some cases with free blood-letting.

DR. KEATING remarked that chloral, chloroform, and similar remedies were beneficial by their action on the nerve-centres, and were serviceable in cases depending upon reflex causes, etc.; but some action was also needed which would diminish the amount of morbid matter in the circulation.

DR. PARISH referred to the variety of causes producing convulsions. We should remember, also, that there are cases in which no albumen is found, by careful examination prior to the convulsions; but afterwards it is found in large amount.

DR. GUITERAS referred to the temperature as a diagnostic point. In uræmia it is almost always low. He remembered, however, a case at the Philadelphia Hospital in which the temperature reached 108°. He had no doubt that many cases of puerperal convulsions could not be ascribed to uræmia. In this connection he wished to put upon record two cases in which the blood was carefully examined by him at the Philadelphia Hospital. The amount of urea found was less than in health. In these cases he believed there was a poison, but not located in the blood. And in cases of uræmia he had also been led to believe that the effete matters circulating in the fluids could not be the cause of the functional derangements. For, to produce the effect of these poisons, they must exist within the tissues, and must come in contact with the cells. He believed this to be the case with most poisons. In the hydræmia of pregnancy the osmotic action between the fluids, outside and within the capillaries, is interfered with. The fluids remain within the tissues, giving rise to dropsy, and with them remain the products of retrograde metamorphosis. These, in the nervous system, give rise to convulsions and puerperal eclampsia, and elsewhere may give rise to inflammations, such as we find in uræmic pleurisies, pneumonias, etc. Blood altered in any way may interfere with the process of excretion from the tissues. Now blood-

letting, by diminishing the tension within the vessels, favors the process of osmosis, and relieves the tissues of the œdema and the load of effete matters. Hence it is that this method of treatment should be followed by such means as will render the blood denser and more capable of establishing the proper osmotic attraction with the solids. He would give concentrated food, iron, and would also suggest transfusion.

In following this train of thought, he would suggest how blood-letting may also do harm by increasing the watery condition of the blood. A return of the convulsions is quite frequent after the temporary relief gained by bleeding, and the result is fatal.

DR. W. S. STEWART related the history of a case of convulsions treated entirely by the injection of chloral in 3j. doses into the rectum at intervals of four or five hours, for two days. The convulsions returned after the influence of each dose wore off, but ceased on the administration of the next dose. This condition lasted for two days; but the patient awoke on the third day perfectly conscious, but ignorant of everything that had passed, even that she had given birth to a child.

DR. PARISH remarked that it is generally agreed that the blood of the puerperal woman is hydræmic.

If we also find in this blood fibrin of the broken-down tissues associated with urea, is there not something to be eliminated?

If we have this hydræmic condition, this plethora of watery blood, this œdema of the tissues, associated with increased vascular tension and hypertrophied condition of the left ventricle of the heart, we must not forget them in our treatment.

Chloral alone does not reach these conditions. We must unite with it some treatment—as blood-letting—which will diminish the urea and the fibrin. Venesection will diminish also the pressure upon the brain.

DR. GUTERAS remarked that he was aware of the theory advanced by Frerichs, that all these convulsions are due to œdema of the brain. He was led to this theory by causing convulsions by injections of water into the blood-vessels of some lower animals, and by relieving them by bleeding. But he (Dr. G.) did not believe the phenomena here are due simply to an increase of the blood-pressure, and a production of the œdema by an exosmosis of the serum from the capillaries; but he thought that here we find a confirmation of his theory in the interference with the elimination of effete matters, by the alteration both of the density of the blood and the tension of the blood-vessels.

REPORT ON OBSTETRICS FOR 1875-76.¹

BY

MATTHEW D. MANN, M.D.

To give a full account of all that has been done in the obstetric world, during the time² covered by this report, is a manifest impossibility. I have been limited, both by want of time and by the number of pages placed at my disposal; so that the incompleteness of the report must be attributed to conditions beyond my control, and not to any disinclination on my part to make it as complete as possible. I have tried to cull only the most important and interesting facts and opinions which have been advanced. The relation of cases has been omitted, unless they demonstrated some new method of operation or treatment, or illustrated some new and important pathological fact. In venturing any remarks of my own, I have used the editorial "we," in order to avoid confusion.

Dr. Barnes,³ in some remarks on the *physiologico-pathological phenomena of the circulation in pregnant women*, says that in pregnancy there exists a peculiar state of the blood, an increased arterial tension, and a disposition to phlebectasis, either general or affecting particular vascular regions or systems, which may, under certain circumstances, lead to hemorrhagic effusions. These effusions may be salutary or conservative. If they come from a mucous membrane, they may avert internal hemorrhages or abortions, or that oppression of the kidneys which results in albuminuria and eclampsia. Hemorrhages from the uterus with abortion may act in the same way. Such hemorrhages may, however, exceed useful limits and induce danger by anæmia. Occurring within the period of sexual life, hemorrhages should suggest the probability of pregnancy or some menstrual disorder; and should be taken as indications to reduce vascular tension, should pregnancy exist. This may be done by bleeding, purgation, salines, abstinence from stimulants, regulating diet, digitalis, etc.

The diagnosis of pregnancy in the early stages is generally a

¹ Read before the N. Y. Medical Journal Association, Nov. 24, 1876.

² The report covers the whole of 1875 and the first half of 1876.

We regret that want of space has compelled us to reduce this Report to nearly one-half its original length.—ED.

³ British Medical Journal, Nov. 13, 1875.

difficult thing. We have always placed considerable reliance on the *mammary papillæ* as a safe sign; but Dr. Vedeler¹ believes, after a careful examination of the breast in several hundred cases, that the papillæ of themselves have no diagnostic value. They may become so, however, when previously existing papillæ become hypertrophied, or when new ones appear. He examined sixty women who had never been pregnant, fifty-five were unmarried, and found papillæ in forty-four, and in seven none, while in three they were as large as in pregnant women; in only thirteen per cent. of the whole sixty were papillæ absent. Again, they were absent in twenty-six pregnant women out of three hundred and thirty-four.

Some additional negative evidence, in regard to the *prediction of the sex in utero*, by the rate of the fœtal heart, is given in a paper, read by Dr. Cumming² before the Obstetrical Society of Edinburgh. Out of one hundred and eleven observations, he found that correct predictions as to the sex of the child exceeded the incorrect by only thirteen. From observations on the weight of the child, he concludes that this uncertainty depends on the fact that the pulse-rate varies not only with the sex, but with the weight, so that a large female child may have a slower pulse than a small male. The ratio of beats per pound is nearly one higher for females than for males. In regard to the uterine souffle, he adopts the now generally admitted view, that it is produced in the uterine vessels, and has no relation to the position of the placenta or to the integrity of the circulation through it.

Another explanation of these sounds is given by Dr. François Glénard.³

By direct observation, he finds that when the abdomen is distended, the stretching is not uniform, but is confined to the fibrous structure called the *linea alba*. This is spread out into a large lozenge-shaped area, bordered by the recti muscles. These muscles are separated, but not increased in breadth. The gravid uterus is thus slung, as it were, in a bandage, between and by them. Examining, he finds that the maternal souffle is heard upon a curved line which corresponds to the course of the epigastric artery, which, in consequence of the mode of expansion already described, remains throughout at the same distance of ten cm. from the spine of the ileum. Finding that the foci of the souffle thus correspond to the epigastric arteries, the author applies the crucial test of compressing the artery where it can be felt pulsating in the lower part of its course,

¹ Med. Rec., Jan. 15, 1875, from Norsk. Mag., f. Toeg.

² Edinb. Med. Jour., Sept., Oct., Nov., 1875.

³ Arch. de Tocolog., Obstet. Jour., May, 1876.

and finds that he can by this means entirely stop the sound. If this theory be true, the maternal souffle has no diagnostic value whatever.

In a paper read before the Académie de Médecine (June 6, 1876), M. Bouillaud discusses the questions raised by the paper of M. Glénard. The author maintains that the so-called placental souffle is identical with the bruit de soufflet produced by the compression of arteries, and has its origin in the intra-pelvic arteries. He does not deny that the bruit de soufflet may sometimes be produced by compression of the epigastric artery, but considers it an enormous error to explain in this way the usual souffle of pregnancy. He thus sums up the arguments in favor of his own view: 1. The positions of maximum intensity of the puerperal souffle correspond to the great pelvic arteries. 2. The souffle disappears when the uterus has returned to its normal size. 3. The common internal or external iliacs are the only arteries in the neighborhood large enough to produce a souffle of such a quality. 4. A similar souffle is produced by other abdominal tumors capable of exercising a similar pressure.

At a later meeting, Dr. Glénard tried to give a clinical demonstration of his theory, but was unable to prove that the souffle could be stopped by pressure on the epigastric, and since then¹ has completely changed his views. He made an autopsy of a woman who died three days after labor—injected the arteries and distended the uterus; he then found an artery as large as the brachial arising from the uterine artery and lying on the uterus and following almost exactly the course of the epigastric. This artery he called the puerperal artery, and believes it to be the seat of the souffle.

M. Depaul² maintains his view, published in 1847, that the seat of the bruit is the large arteries which supply the pregnant uterus and are most developed near the placenta. He makes a distinction between souffle with pulsation and souffle without pulsation. Both may be heard in pregnancy, but the latter is characteristic. He combats the theory of M. Bouillaud by the following arguments: 1. The puerperal souffle may be heard in the third or fourth month of pregnancy, when the uterus is not enlarged enough to compress the iliac arteries. 2. It is not the fact that it ceases when the patient is placed in the prone position; it is still heard then, but auscultation is more troublesome. 3. It is only exceptionally heard in extra-uterine pregnancy, in which it ought to be constant, according to M. Bouillaud's view. 4. It is comparatively much less common

¹ Arch. de Tocologie, Aug., 1876.

² Obst. Jour. Gr. Br., Oct., 1876.

in fibroid tumors of the uterus than in pregnancy, and very rare in ovarian tumors.

There seems to have been an unusually large number of cases of *extra-uterine pregnancy* reported of late, a fact which we must probably attribute to the increased facilities and skill in diagnosis.

Dr. Thomas has introduced a new method of operation for the removal of the foetus under these circumstances, and reports one successful case. The patient had an abdominal tumor and pain in the left iliac region. An examination revealed a cyst to the left of the uterus and as large as that organ, and reaching down as far as the middle of the cervix. Ballottement showed a rolling mass within this cyst.

The operation was done as follows: Sims' speculum being introduced and the vaginal wall put upon the stretch, an incision was made with the galvano-cautery knife through the vaginal wall to the cyst. This was then punctured, and the foetus delivered. A portion of the placenta was detached; but such violent hemorrhage followed that liq. ferri persulphate was injected, and the cavity stuffed with cotton previously soaked in iron and dried. Symptoms of septicæmia showed themselves on the fourth day, when the cotton was removed, and daily injections of carbolic acid and water were instituted. The patient then began to improve, and finally recovered. The doctor thinks that it was a mistake to attempt the removal of the placenta, and in another similar case he would leave it alone.

This operation is certainly characterized by the boldness and ingenuity for which Dr. Thomas is so justly celebrated.

Dr. Thomas also reports another successful case, where extra-uterine pregnancy existed. The diagnosis was not made with certainty until the liq. amnii (2 gallons) was drawn off, when the child could be distinctly felt. The pregnancy had existed more than nine months. The foetus was removed dead, and the placenta left. Several weeks after the woman was seized with febrile symptoms, and the placenta was found loose in the abdominal cavity and removed by a small opening which had remained; recovery followed.¹ A similar case was reported by Dr. Dresselhuys,² when an abscess had formed, and the child's head presented in the opening.

One case was reported where the sudden breaking of the cyst in a tubal pregnancy was mistaken for poisoning. Other cases have been reported where the foetus became encysted, as a case by Dr. Polaillon.³ Dr. Depaul has had a series of eight

¹ Am. Jour. Obst., Oct., 1876.

² Obst. Jour. Gr. Br., July, 1875, from a Dutch journal.

³ Annales de Gyn., June, 1875.

articles on this subject in the Archives de Tocologie. An operation, he thinks, on account of the uncertainty of diagnosis, can rarely be resorted to before the fifth month. After that conditions alter. Taking into account both the interest of the mother and of the child, he would operate at the eighth month. He cites nine cases where gastrotomy was done; seven infants lived and four mothers.

By far the most complete work—really the first systematic treatise on the subject—is by the late Dr. John S. Parry. This work is characterized by careful study, great research, and clear and concise statements. In cases of rupture of the sac, he advocates immediate operation, in order to control the hemorrhage. With the brilliant example of Dr. Thomas before us, we certainly ought not to hesitate, so much as formerly, to operate as soon as the diagnosis is clear.

A most interesting paper has been written by Dr. Leopold¹ on the *habitual death of the ovum*, and its artificial expulsion.

We can only give the conclusions, as the paper is very long and exhaustive. The habitual death of the ovum may be due to various causes, as: 1, syphilis in the parents; 2, anæmia or blood anomalies in the mother; 3, chronic diseases of the uterus, or uterine irritation, a general individual irritability; 4, inherited disposition; 5, changes in the placenta and umbilical cord. The treatment must consist in removing the cause. Premature delivery will often save the child. The exact time must be determined by the condition of the foetal heart, by the history of previous pregnancies, and by the probable cause of the premature death.

The morbid retention of the dead ovum has excited considerable interest, and has called forth several very interesting papers. Dr. McClintock² says that, as a rule, when an embryo perishes in utero, it is at once expelled; but there are many exceptions to this rule, and they constitute very perplexing and troublesome cases.

A patient of Dr. Montgomery's, after two months of supposed pregnancy, went through all the symptoms of an abortion. She continued, however, to have irregular uterine flowing, and suddenly, after a drive, was taken with uterine pain and hemorrhage, and the doctor delivered her of a dead foetus which had been in utero seven months after its vitality had ceased. McClintock, Mundé,³ Johnston,⁴ Ingleby, and others⁵ have reported similar cases. Admitting the fact that the dead ovum can be retained a long time, it becomes a matter

¹ Arch. f. Gynäkol., Bd. 8, Heft 2. ² Obst. Jour. Gr. Br., Feb., 1872.

³ Am. Jour. of Obst. Feb., 1876.

⁴ Johnston Am. Jour. Obst. Feb., 1875.

⁵ E. P. Christian. Penin. Jour. of Med., May, 1875.

of great interest to determine how long this retention may last. Dr. McClintock is inclined to place the limits at nine months, though he admits that there is no *a priori* reason why an ovum which died early should not be retained longer than nine months, when a fœtus, dying near the end of pregnancy, may be retained beyond that time—cases of so-called missed-labor. We are surprised at McClintock's statements; for, had he searched the literature of the subject carefully, he would have found many cases where retention has lasted longer than nine months. In Johnston's case labor did not come on until the tenth month, and Mundé has collected a number of cases where even this period was passed over. One went ten months; two, eleven months; two, twelve months; one, thirteen months; one, seventeen months; and one, eighteen months. Cases are recorded where fœtal bones have been discharged from the uterus years after conception, or have only been discovered in utero on the death of the mother years subsequent to the pregnancy. As an instance, we may mention the case where Camerarius (quoted by Mundé) found a calcified ovum weighing eight pounds, with a mummified fœtus enclosed, in the uterus of a woman ninety-four years of age.

These cases are enough to show that the opinion of McClintock, that the term of nine months for the retention of a dead ovum is never exceeded, is not correct. The period may vary from a few hours to days, weeks, or years.

Dr. J. A. Byrne maintains that the commonly received opinion, that the fœtus is usually expelled immediately after its death, is a mistake, and that it generally remains in the uterus some time.

The *changes which the dead ovum* may undergo after its death are not many. Generally a mummification or desiccation of the tissues takes place, and, if the retention lasts for years, it may be calcified. Again, it may be entirely absorbed, or it may become putrid, break down, and be discharged piecemeal. The greater the age of the fœtus at the time of its death, the greater the likelihood of its decomposition. The preservation of the fœtus is attributed to the exclusion of air by the membranes, and to the antiseptic properties of the salt contained in the amniotic fluid. The placenta sometimes continues to grow after the death of the fœtus, and may be larger than would correspond to the apparent age of the fœtus. It may even reach the size of the placenta at term, the fœtus at the same time being very small or even wanting. The death of the fœtus may depend either on some condition affecting itself, very often on some disease of the cord, and there are reasons to suppose that often the death is slow and gradual. Thus you will see that

it is not possible to determine the length of time an ovum has been retained from its size or appearance, as is shown by the apparent youth of some embryos after known long retention, and by the frequent non-correspondence between the size of the foetus and placenta. An important medico-legal point.

The *diagnosis* is often difficult, for there is "no class of cases more unsatisfactory or puzzling." We must often rely upon the statements of patients, and, in so doing, we are often liable to be greatly misled. The os is generally soft, flaccid, and gaping, and the uterine body enlarged. A fetid discharge, if present, may be of great value, as indicating the death of the foetus. The use of uterine thermometry promises to be of great service. Too much dependence must not be placed on the statements of the patient, that she has had a miscarriage and that all has passed from her. This has been the source of several mistakes. If, after exercising all our skill and knowledge, we should fail to make a diagnosis, we should not be discouraged, for McClintock mentions having been at a consultation where five distinguished practitioners were unable to decide whether the child was dead or living.

Prognosis.—If there is no putrid discharge, and the woman has not been exhausted by hemorrhages previously, the chances are that the ovum will be discharged, with only slight loss of blood, and she will make a good recovery. If putrefaction has taken place, the chances of flooding are even more diminished; but other dangers are increased. McClintock says: "I believe it may be laid down as an aphorism, that the more advanced the development of the ovum, the more likely is the retention to be productive of ill consequences to the health of the mother." The treatment consists in causing the expulsion of the foetus at once. To this end we may dilate the cervix with tents and give ergot; or we may sometimes follow the expectant method, and allow the foetus to be retained until term, when it will generally be expelled spontaneously. To dilate without being certain of the death of the foetus, would be unjustifiable. Antiseptic treatment should be instituted when putrid discharges exist.

In our last report we mentioned the report by Dr. Gervis¹ before the London Obstetrical Society, of three cases of *retroversion of the gravid uterus*. In the subsequent discussion² a number of gentlemen related their experience with this accident. Besides this, the subject has attracted a good deal of attention, and Mundé,³ Campbell,⁴ Solger,⁵ E. Martin,⁶ A. W. Edis,⁷

¹ Obst. Jour. Gr. Br., Dec., 1874.

² Obst. Jour. Gr. Br., Jan., 1875.

³ Am. Jour. of Obst., June, 1876.

⁴ Atlanta Med. & Surg. Jour., May, 1875.

⁵ Beiträg z. Geb. Gynäk., Vol. IV., No. 1. ⁶ Zeitschr. f. Geb. & Frauenkrh., Vol.

⁷ British Med. Jour., Dec. 26, 1874.

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and Albert Smith,¹ have all given us more or less elaborate papers, confining themselves principally, however, to the methods of reduction. The *cause*, as was first pointed out by Tyler Smith, is now generally admitted to be a retroverted condition of the uterus, existing before pregnancy began. It has been seen in several cases to follow immediately on some great muscular effort, as lifting a heavy weight.

Martin considers the *diagnosis* difficult. It may be confounded with retro-uterine hæmatocele, extra-uterine pregnancy, tumors, or other enlargements behind the uterus. Examination by the bladder and rectum, if possible, in cases of doubt, and perhaps the cautious introduction of the uterine sound (Martin) may help to solve the difficulty. Barnes mentions bulging of the perineum as a symptom which, if present with others, would make the diagnosis certain. Retention of urine may be one of the first symptoms; but if, as in Mundé's case, flexion occurs, the cervix does not press on the urethra, and no accumulation of water takes place.

The prognosis is always favorable, provided the case is seen early enough. Of the forty-eight cases reported at the Obstetrical Society, eight died.

The cause of death may be found in a gangrenous condition of the mucous membrane of the bladder, which occurs as a result of the prolonged distention.

One case recovered after exfoliation of the entire mucous membrane, a contracted bladder, and inability to hold water longer than a few minutes resulting. Death also results from retrograde changes in the kidneys, uræmic shock, and exhaustion. Rupture of the bladder, Barnes considers a very rare complication; and he expresses the same opinion as regards the occurrence of peritonitis, although that is commonly assigned as a cause of death.

Abortion is a not uncommon result of retroversion, and this may occur before any other symptoms are produced.

The middle of the third month or the beginning of the fourth (in Mundé's, the eleventh week), is the time when the symptoms first manifest themselves.

The treatment is, however, the main point in which there has been advance. The question, as to whether the uterus should be replaced at once, when its displaced condition is discovered, seems to depend on the condition of the patient. If the retention has lasted long, and secondary changes occurred, and the patient's condition be thereby very much reduced, then many authorities hold that the water should be drawn off, and time

¹ Obst. Jour. Gr. Br., April, 1875, Am. Supl.

enough be allowed for the patient to recover somewhat before any persevering efforts are made at reposition. Others, again, hold, as Gervis, that attempts at reposition should be made as soon as the bladder is emptied, as longer delay endangers various pathological probabilities.

If the case is recent, and no serious symptoms have occurred, we may proceed at once in our attempts to put the womb back into its proper place. In the majority of cases, reposition is comparatively simple; but in some the uterus seems to cling to its abnormal position with great tenacity. In pushing on the fundus, either with a finger or some blunt instrument introduced into the vagina or rectum, care should be taken to direct the fundus to one side of the promontory, that being the obstructing point.

The method now introduced avoids the use of any instruments, the force of gravity and the atmospheric pressure being called upon to do the work. Drs. Campbell, Mundé, and Solger all appear as the advocates of this method. Aveling and others, in London, advocated the placing of the woman in a position, so as to take advantage of the force of gravity, but stopped there.

The three gentlemen mentioned seem, all about the same time and independently, to have brought forward the same idea. The observation which Dr. Mundé made, and which is a counterpart of that made by Solger, is as follows: Having placed the woman *à la vache*, after all attempts at replacement by pressure had failed, he tried whether, by drawing the cervix away from the pubis towards the floor of the pelvis, he could not dislodge the fundus and reduce the dislocation by simultaneous digital pressure per rectum. Having introduced a Sims' speculum, and pulled the perineum up sharply, he noticed that the vagina filled with air like a balloon, and the uterus was suddenly replaced. He considers that the explanation of the phenomenon is perfectly simple and obvious. The position of the patient produced a slipping of the movable abdominal viscera away from the pelvis, and a suspension of the intra-abdominal pressure or *vis-a-tergo*, its place being supplied by a greater or lesser amount of suction, or traction away from the pelvic organs—a certain *vis-a-fronte*, so to speak. The forcible elevation of the perineum opened the introitus vaginae, and gave entrance to a volume of air, the pressure of which had already been pushing up the perineum, slightly drawn inwards by the downward gravitation of the abdominal viscera, and the pressure of which, when admitted, instantaneously distended the vaginal pouch and replaced the uterus.

Solger attributes the same result in his case to the overcoming

of the intra-abdominal pressure (100 lbs.), by the atmospheric pressure (100+lbs.), aided by a negative intra-abdominal pressure, not exceeding, according to Schatz, 10 cm. hydraulic pressure, and the weight of the uterus itself.

Campbell holds that "the indispensable condition of power and the real instrumentality and *sine qua non* in the process of replacement" is the pneumatic pressure, without which the posture alone is almost useless.

For our own part (Reporter), we do not perhaps appreciate the importance of this wonderful pneumatic pressure, for we feel forced to affirm that it does not seem to us to be the all-powerful *active* factor which the writers referred to seem to believe.

We may be pardoned, then, if we intrude our own explanation of the way in which the uterus is replaced in these cases.

If now we place a woman with a retroverted uterus in the knee-chest position, the weight of the womb itself, that is, *gravity*, and a suction power, produced by the falling away of the abdominal contents, which falling away *tends* to produce a vacuum, into which the uterus would naturally fall, that is, *atmospheric pressure*—for it is by this pressure that the womb would be forced into the vacuum if formed—both tend to draw or push the womb downward and forward towards the pelvic outlet.

It is hindered from going into this position by two factors: first, friction, which may be very great; and, secondly, by atmospheric pressure, because it cannot fall forwards without forming a vacuum behind it.

Thus atmospheric pressure tends to push it down—this is equal only to the weight of the abdominal contents which draw on the pelvis, and atmospheric pressure also tends to keep it in place—this being equal to the resisting power of the pelvic walls and the perineum. The latter together with friction being greater, the uterus remains in position.

It may be objected that atmospheric pressure is equal to 15 lbs. to the square inch, and must be greater than here assumed. True, but only so much of its power is exerted as neutralizes the force brought against it, viz., the force which tends to form a vacuum. If now we open the vagina, air enters, and the abdominal contents fall forward just in proportion to the volume of air admitted, that is according to the containing power of the vagina. Thus gravity is allowed to act and the uterus is allowed to fall, without material change of axis, from its position. But the admission of air into the vagina does not satisfy the demand of the abdominal contents to fall forward. There is still the same tendency to the pro-

duction of a vacuum; and the suction or pressure, which was exerted previously on the perineum, is now applied to the vaginal walls, and they are distended. How much this pressure can be exerted directly on the uterus, depends entirely on its position. If it was nearer the perineum than the posterior vaginal cul-de-sac, it may be pushed upon directly by the air; but it can be moved only so far as the vagina reaches. The cervix being fixed by its junction with the vagina, the fundus may then be pushed down to a certain degree. Supposing that friction is not too great, the uterus falls en masse and the fundus, if retroflexed, is pushed down as far as the vagina reaches; this in itself is not enough to replace it. If it gets above the brim, however, friction is lost, and it swings forward on its lateral axis by its own weight, the soft and yielding intestines which were in its front taking the place behind. This method should certainly be tried before all others, as it is simple, and may accomplish the desired result; but if it fails, it may still be a useful auxiliary to direct pressure by the hand. If all other methods fail, Barnes recommends the use of the aspirator to draw off the liq. amnii, and so produce abortion.

As a *preventive of retroversion* of the gravid womb, Dr. Albert Smith (loc. cit.) insists upon the necessity of treating the retroversion before the patient becomes pregnant. He considers it necessary to wear the instrument during the first four months of pregnancy.

He has found, also, that many cases of *repeated abortion* are due to this form of displacement (not retroflexion), and that the patients often get over this habit of aborting when the uterus is held up by a pessary. He has observed in some cases a great amelioration of the nausea and vomiting of pregnancy when the women were wearing pessaries. He uses the instrument known by his name, a modification of the well-known Hodge instrument.

Dr. Johnston,¹ of Washington, after collecting the histories of two thousand labors in colored women, has given us a very interesting account of *some of the apparent peculiarities of parturition in the negro race*, with remarks on race pelves in general. He finds that the labors are short and the period of convalescence proverbially short and uncomplicated. Breech presentations are rare, only one in two hundred cases, and the head presents with greater uniformity than among white women. The cord is very frequently around the neck—one in six cases. He found one case of rupture of the uterus, and one of placenta prævia, which recovered. Convulsions oc-

¹ Am. Jour. of Obst., May, 1875.

curred once in two hundred and eighty labors; but he has reason to think that this is above the average. Post-partum hemorrhage is rare—once in five hundred. Puerperal fever occurred but once in five hundred labors, notwithstanding the very bad hygienic condition of most of the patients. The forceps were only used four times, and there did not seem to be any bad results which might have been averted by a more frequent use of these instruments. The natural and rapid course of the labor is due to the general good health and consequent strength of the women, and to the short fronto-mental and occipito-frontal diameters of the foetal head consequent on the low development of the anterior cerebral lobes. Only one case of deformed pelvis was met with.

The pelves of the negro race have not been extensively examined; and though it is hardly permitted to draw positive conclusions in regard to the pelvis of a race from the examination of so small a number, yet, so far as these fifteen pelves can show us anything, it has been demonstrated that the negro pelvis is, or appears to be, less capacious than the European, and that the anterior-posterior diameter of the outlet is relatively greater.

The use of chloral in labor continues to attract attention, and several new advocates have appeared. Friedländer¹ has proposed a new way of *mitigating the pains of labor by the local application* of a mixture of chloroform one part, ether two parts, to the sacral region. He applied it to a woman suffering intolerably, and it produced a total cessation of all pain until perfect delivery. Since then he has applied it to a great many cases with perfect success.

In cases where the uterus has become completely or partially spasmodically contracted on the foetus or on a separated placenta, in order to overcome the spasm, Dr. Fränkel,² of Breslau, recommends a hypodermic of one-thirty-third of a grain of atropia and one-quarter of a grain of morphia, with inhalation of chloroform five minutes later. The uterus relaxes speedily and yieldingly. There need be no fear of post-partum hemorrhage.

In a paper, which your reporter wrote a year and a half ago, but which he never published, there were collected some apparently good reasons for thinking that *in this or similar conditions* we have a most valuable remedy in the *amyl nitrite*. This belief is founded on the known physiological action of the drug, and on one case,³ where it was given for puerperal eclampsia, with the result of relaxing the

¹ Deutsche Klinik, No. 30, 1874. ² Berlin klin. Wochenschr., Nov. 23, 1874.

³ W. F. Jenks, Phil. Med. Times, 1872, Vol. II., p. 404.

already firmly contracted uterine. We think we may safely predict that this agent will more certainly relax a spasmodically contracted uterus, or stop recurring contractions, than ergot, to which it is a physiological antagonist, will recall or increase these contractions. We hope that some one who may have the opportunity will act on our suggestion and give us the result. The danger of post-partum hemorrhage must be borne in mind, and the remedy withheld where immediate extraction is demanded.

As an *accelerator of parturition* we have new testimony in favor of *quinine*. Dr. Stafford¹ gives it in eight-grain doses and finds that it does not produce the spasmodic contractions of ergot, but regular, firm contractions, and that after its use there is very little danger of flooding.

The existence of the condition known as *milk fever*, has of late been called in question. Dr. Howe² has examined the subject, and concludes that there is such a condition. He considers it due to the establishment of the new function in the breast, and if the milk is not drawn, to the stretching and irritation which the accumulated milk produces. We cannot agree in thinking that it is the universal sequence of parturition; it certainly has not been so in our own experience. Winckel has said that it is "quite time to drop completely from scientific language the name 'milk fever,' inasmuch as this vague term, being applied to a number of most diverse affections, has tended to render obscure our knowledge of the genuine causes of the fever, and to make difficult the diagnosis of the trouble."³

We have another authority advocating a similar *treatment of the lying-in woman* to that advocated by Dr. Goodell, of Philadelphia. Dr. T. W. Hime,⁴ Sheffield, Eng., is the gentleman; and, in an interesting paper which he read on the subject, he advocated the treatment of the lying-in woman, not as though she were a patient, but merely as if she had undergone a physiological process, following which there were certain risks, to be sure, but which did not constitute a diseased state. The patient is to be well fed on easily digestible food from the start; slops to be banished. She is to sit up in bed from the first, and to be on the sofa in the fourth or fifth day. The binder is of no use after the first twelve hours. She is to be removed to a fresh bed and room, if possible, after forty-eight hours. Strict cleanliness and good ventilation are to be se-

¹ O. B. Stafford, N. Y. Med. Jl., Feb., 1875.

² Am. Jour. Obst., Feb., 1876.

³ Winckel on Child-bed, p. 398.

⁴ Brit. Med. Jour., August 21, 1875.

cured, and the personal attention of the physician is to be directed to all these points, else his orders are not likely to be carried out.

The treatment of *rupture of the perineum* has continued to attract considerable attention. Dr. Lente¹ and Dr. Noeggerath² have both written papers on this subject. The former advocated a do-nothing policy against immediate operation, while Dr. N. tried to show, by reference to the results obtained in European lying-in houses, that primary operation is the treatment to be preferred. He did not think much of the *serres-fines* advocated by Dr. Mann, and used in Vienna.

Dr. Lusk thought that, judging from his experience, primary operations did not give very good results. Sometimes, however, surprisingly excellent results were obtained by simply keeping the knees together. Dr. Goodell, in a paper read before the American Gynecological Society, advocated strongly the immediate operation.

Dr. John Brunton,³ in an article on *prolapse of the funis*, after considering the different methods of treatment usually advocated, viz., the forceps, version, replacing by the hand, catheter, or special instruments devised for the purpose, gives the chief place to the method revived by Dr. Thomas, of this city—the postural method, placing the woman in the knee-chest position.

Dr. Hicks⁴ calls to mind the method of replacing the prolapsed funis, which was proposed by him several years since. While admitting that the postural treatment is excellent, he claims for his method all the advantages without the drawbacks attending the awkwardness and disturbing nature of the first-mentioned method. His plan is as follows: The patient being on the left side, one hand is placed over the lower abdomen, the other introduced into the vagina. The funis is then to be passed within the os, and the head being lifted up, it is to be passed by its side and then above it. The external hand presses the head down towards the os. While the head is pressed down without, the hand inside is slowly withdrawn, taking care that the funis does not follow. Pressure is kept up over the period of two or three pains, when the uterus will hold the head in position, and the cord will be effectually prevented from coming down again.

From an analysis of cases, Dr. J. Brunton⁵ finds that the chief diagnostic symptoms of accidental concealed hemorrhage

¹ Am. Jour. Obst., Nov., 1875.

² Obst. Jour. Gr. Br., April, 1875.

³ Ibid., Nov., 1875.

⁴ Ibid., May, 1875.

⁵ Obst. Jour. Gr. Br., Oct., 1875.

are sudden fainting and collapse, with blanching and continuance of the same, so as to cause great alarm to the medical attendant; intense continuous "*bursting*" pain, tense membranes, and all the symptoms of excessive bleeding, but without the external manifestations of flowing. The ordinary cause of separation of the placenta is that it has ripened. It may degenerate, so as to fall off too soon. When near the time of labor, there is more danger of sudden disturbance. Weight, size, vascularity, and sluggishness of circulation are factors which tend to hasten the separation. The immediate causes are sudden spasms, producing partial or irregular uterine contractions, violence (subjective), such as exertion, cough, missing a step, etc., and, lastly, violence ab externo. Of his cases, nineteen died and fifteen recovered—a very large percentage of deaths, making this a very fatal accident.

A recent case in England has attracted much attention to the uncommon accident of *rupture of the uterus*.

Mr. I. Ashburton Thompson¹ has collected twenty-three unselected cases, and comments on the variations noticed in the symptoms from what may be called the normal or classical type.

As generally given, the chief symptoms are: 1st, violence of the throes before rupture; 2d, a peculiar pain at the time of rupture; 3d, hemorrhage; 4th, immediate cessation of the pains; 5th, retrocession of the presenting part; 6th, the speedy occurrence of collapse; 7th, convulsions. He shows that not only are variations from these symptoms common, but are actually more common than the typical cases themselves. The aid to diagnosis to be gained from the character of the uterine contractions was in 73.4 per cent. none; from the occurrence of characteristic pain at the moment of rupture in 57.8 per cent. none, and none from the action of the uterus subsequent to the rupture, 47.1 per cent. In 66 per cent. of cases there was no sudden occurrence of collapse, and in 75.8 per cent. there was no retrogression of the child—that is, in cases where the retrogression was not mechanically obstructed. There were no symptoms of external hemorrhage or convulsions.

From a general view of these cases, it appears that in some an early diagnosis of the patient's condition was impossible, for the simple reason that they showed no extraordinary symptoms whatever; while in many, although the condition of the patient attracted attention, there was no one symptom marked enough or any combination of lesser symptoms, which would

¹ *Obst. Jour. Gr. Br.*, Jan. and Feb., 1876, and *London Med. Review*, Feb., 1876.

have justified the diagnosis of laceration, had the presence of that injury been suggested.

The *treatment of placenta prævia*, Dr. Thomas¹ thinks, should always, when possible, consist in the induction of premature delivery. The diagnosis is generally easily made. By this mode of treatment we have the labor completely under our control, instead of having it occur at night or when the doctor is not at hand. The patient is not exsanguinated and dangerously reduced by repeated loss of blood. The doctor has adopted this plan of treatment, and has lost but one patient, and she from post-partum hemorrhage. The advantages to the child are also greater, for the repeated hemorrhages debilitate the child also; and a healthy child at eight months is as likely to live as a weakly one at term.

This method of treatment is also advocated by Greenhalgh,² and by Playfair,³ and the arguments in its favor are unanswerable.

Dr. Jacobi remarked that in placenta prævia we were particularly likely to have post-partum hemorrhage, due to the anatomical relations of the parts.

Dr. Swayne⁴ considers that *adhesions of the placenta* are found more frequently in the higher than in the lower walks of life, and that it is due largely to high living and a great consumption of meat. He has met with forty-three cases, all among the rich and well-to-do classes.

Dr. J. S. Parry called attention to the use of the hand to facilitate delivery in the following conditions: See Am. Jl. Obst., May, 1875.

A series of cases of *injuries to the fetus in breech deliveries*, has been tabulated by Dr. Ruge.⁵ In the first group are found forty-four instances of lesions produced in extraction after version. These include fractures of the humerus, femur, clavicle, parietal, occipital, and lower maxillary bones; rupture of the cervical and dorsal vertebræ, and of various muscles, as sternomastoid, pectoral, etc., and also of the longitudinal sinus; effusions of blood into abdominal muscles of the chest, etc., and separation of various epiphyses.

In the second group are those produced in breech presentation. Twenty-nine instances are given where fractures, etc., occurred. The author insists upon the advantages of "expression" over traction on the trunk, care being taken to have the head in the best position for passing through the pelvis.

In the Philadelphia Obstetrical Society a long and interest-

¹ Am. Jour. Obst., Feb., 1876.

³ Obst., p. 365.

² Obst. Trans., Vol. VI., p. 188.

⁴ Brit. Med. Jour., June 19, 1875.

⁵ Bull. Gén. de Thérap., August 15, 1875.

ing discussion has taken place on "turning in pelves narrowed in the conjugate diameter." The original *causa belli* was a paper by Dr. Goodell.¹ This called out a reply by Dr. Ellwood Wilson, a rejoinder by Dr. G., a paper by Dr. Stewart, etc. The debate finally assumed so personal a character as to lose most of its scientific interest, though the bandying about of lively words must have given it a spiciness to the actual participants. Accusations involving the observance of the sixth and ninth commandments do not aid scientific research. The earlier, papers, however, are of extreme interest.

M. Laroyenne,² in order to carry out M. Chassagny's doctrine that "*the force should be directed on the centre of a body which has to engage and pass along a curved canal, such as the pelvis,*" has the ordinary forceps blades pierced at the anterior and posterior margins, corresponding to the centre of the head seized by the forceps, through which he passes a strong piece of tape, threading them from within outwards; each blade having a separate tape. The instruments being applied as usual, the four ends of tape are tied together, and traction made upon them—the handles of the forceps being used as a rudder to steer the head into whatever position it is thought requisite.

Thus the power in the middle is represented by the strings of tape and the resistance by the diameters of the head which fix it at the contraction. The handles must be elevated in order to get the full effect of the traction. By alternately drawing the strings from one side to the other, the direction of the force can be varied without the danger of doing the mischief that is apt to arise in the use of the forceps where great skill and care are not exercised. Clinical experience has convinced M. Laroyenne of the readiness of application of this modification, of its safety and its advantages; and he strongly recommends its use when there is any contraction or disproportion of the pelvis needing instrumental aid.

Dr. Hugh L. Hodge, in a paper which was left unfinished at the time of his death, and which was completed by his son, by extracts from his published writings, discusses the *compressibility of the fetal head by the forceps*, the great value of cephalotripsy, and that form of cephalotribe which would render it most useful as a compressor, and also as a tractor. See Am. Jour. Obst., May, 1875.

He begins by quoting a statement, made by Meigs, that the forceps is not a pincers, but an extractor. He believes this to be an erroneous idea, and one which has greatly restricted the

¹ Am. Jour. Obst., August, 1875, et seq.

² Lyon Médical, Aug. 22, 1875.

practical use of this most invaluable of all obstetrical instruments. He maintains that the vault of the foetal cranium is so constructed as to render it capable of compression, simply from its anatomical arrangements. The lateral diminution allowed to take place in natural labor is stated at from three to six lines; it may be even six to eight lines. An accurate prognosis, as to the life or death of the child, is impossible. If the diameter is less than three inches, no reasonable hope can be had in a foetus at term. The assertion, commonly made, that the death of the foetus is generally due to pressure on the brain when it dies during labor, cannot be admitted. The brain is of no use to the foetus, as seen in acephalous monsters. Another proof is gathered from experience, when we find the child surviving after prolonged and severe pressure on the cerebral mass, provided there is no rupture of tissue or internal extravasation. If, however, the connection between parent and child, in the placenta, is severed for a period exceeding five minutes, death is the result—respiration being stopped. This may be brought about in various ways. A practical deduction is, that pressure on the child's head and body should be intermittent; and, secondly, that when the placenta is detached, the only hope for the child is in speedy delivery. The extent to which compression may be safely carried must vary with the case. "I have often delivered children with safety in cases where there were but three inches in the conjugate." The construction of the forceps is of great importance. The British forceps is, as a rule, too weak. The Baudelocque instrument, as modified by Dewees, and later by Hodge, is recommended. The pin, to prevent approximation of the handles in Elliot's forceps, is condemned. The forceps may be passed into the os. Flexion of the head must be induced, or traction will be comparatively inefficient. On forceps *versus* version, the doctor gives his opinion in favor of forceps; holding that when there are at least three inches in the conjugate, "the delivery by suitable forceps is far more safe for the mother, and that the mortality for the child would be less." The seventh proposition made is, that the obstetric forceps, when well constructed, is the best extractor in cases of dead children, and also in cases of craniotomy. By this instrument, the size of the head is directly diminished, while nearly all the so-called craniotomy instruments are mere extractors, diminishing the size of the head only on the principle of wire drawing. One only, the cephalotribe, which is, in fact, a modified forceps, acts on the correct principle of compression, so that it may be considered that the introduction of cephalotripsy into obstetric practice by Baudelocque

locque, Jr., should be considered the greatest improvement in operative midwifery since the seventeenth century.

The remainder of the paper has been filled in by extracts from older and well-known writings.

Dr. J. Matthews Duncan speaks strongly, as is his wont, *against the pendulum movement in working the midwifery forceps*. He does not object "to changes in the direction of traction by forceps, such as may be required according as the dragged head descends or such as may be called for when the head has been previously ineffectually dragged in a wrong direction." He does object, however, to the pendulum, oscillatory, or leverage-like motion of the dragging instrument, and claims that it does not lead to any economy of force, and that it is injurious. There is no toothed rack in the wall of the pelvis or roughness to take its place, and the pulling down, first on one side and then on the other, is inutile, and has no analogue either in natural or morbid parturition.

In the November number (1876) of the *Obstetric Journal of Great Britain and Ireland*, Dr. Galabin takes issue with Dr. Duncan, and claims that this way of using the forceps has its uses. A very carefully studied argument leads to the following conclusions:

1. The oscillatory movement is superfluous in all cases where extraction can be effected by forceps with moderate force, and it is useless when the head is movable—friction taking little part in its retardation.

2. When the head is impacted, a very slight oscillation, in which the head is made to take part, may assist in starting it by converting the greater statical into lesser dynamical friction.

3. When the head is impacted, and great force is required for its extraction, a mechanical advantage may be gained from leverage by having recourse to an oscillatory movement. The oscillations should be of very small amplitude, and should only be continued if it is found that each of them causes a corresponding advance of the head. Each oscillation should be accompanied by firm compression of the head to prevent the forceps slipping and the lever becoming decomposed, and also by the utmost tractile force which is considered permissible, to assist in fixing the fulcrum.

Dr. Duncan's position is also assailed by Dr. E. J. Hicks, *Obstetric Journal*, May, 1876.

In the annual report of the Master of the Rotunda Lying-in Hospital, Dr. G. Johnston, he is able to show a very low death-rate; fifteen in twelve hundred and thirty-six cases, only seven of them, or one-half per cent., being from strictly puerperal

causes. This he attributes, in great part, to the practice of interfering to prevent the labor being protracted, thus preventing the evil consequences arising from exhaustion and long-continued pressure on the soft parts. The method of interfering was generally the *application of the forceps*, and this was done not only in cases which would be ordinarily considered as proper for this operation, but in a large number of cases (forty-two) *where the os was only partially dilated*, but dilatable. This method of operating, entirely opposed as it is to the generally-received teachings on the subject, deserves our careful attention, as being one of the most important advances which have been promulgated within the time of our report. True, it is not entirely new, but Dr. Johnston is the first to report a sufficient number of cases and to give rules of procedure to place the operation on a firm basis.

The degree of dilatation varied in his cases; assuming four inches as the degree of dilatation for the head to pass, in twenty-four cases it was two-fifths dilated; in twelve it was three-fifths; and in five, four-fifths. The conditions which render the interference advisable are, first: early escape of the liquor amnii before dilatation of the os, thereby allowing the foetal head to press injuriously upon the soft parts of the mother. Another condition is the descent of the head directly on the cervix, without the intervention of the bag of waters, the result being the same in both cases. In one case prolapse of the funis, and in another, placenta prævia, were considered conditions warranting the operation. The position of the head varied; in eleven instances it was above the brim; in seventeen, in the brim; and in fourteen, within the cavity of the pelvis.

Dr. J. has now operated in one hundred and thirteen such cases, and has never failed, thus certainly demonstrating that our old ideas as to the applicability of the forceps are destined to undergo a change. It probably will not soon become common practice to apply forceps in every case of labor tedious in the first stage. Still, as Dr. McClintock remarks, it is a great consolation to know that when the head is high up in the brim, and the os not fully dilated, should any emergency arise demanding immediate interference, we may have recourse to the forceps, with probable safety to both mother and child.

A case of *separation of the symphysis pubis* during labor was reported by Dr. Z. B. Adams,¹ where an adequate cause for the accident does not appear. The head was fixed in the brim eight hours; then the forceps were applied. The expul-

¹ Boston Med. and Surg. Jour., July 6, 1876.

sive pains were strong, and traction was made in the axis of the brim at the same time, when the symphysis gave way with a loud crack. The forceps did not slip, and traction does not seem to have been excessive. There was no deformity of the pelvis, nor was the head unusually large. The anterior wall of the bladder was ruptured and a rent made into the vestibule. One month later an examination showed the ends of the bones separated by two inches. No attempt seems to have been made to keep the ends together immediately after the operation.

In the Berlin klin. Woch., No. 28, we find another case of rupture of the symphysis pubis during labor. It was a case of version. The bandage was applied and the patient made a good recovery. A similar case¹ was observed in the Erlangen Hospital.

Symphiseotomy in contracted pelvis has long been recommended, has had its day indeed, and been dropped. It was proposed as far back as 1768, by Sigault, as a substitute for craniotomy, and was largely advocated on the Continent; but the slight gain in the antero-posterior diameter made the risks of the operation greater than the benefits. Dr. Picinini,² of Italy, has revived the operation, making, however, the incision subcutaneous, and thus avoiding many of the changes consequent to the operation. Dr. P. d'Erchia gives as reasons for the abandonment of the operation: 1, the accepted custom in France and England, of always sacrificing the child for the safety of the mother; 2, the introduction of the cephalotribe; and, lastly, the prevalence of the custom of inducing premature labor. Dr. P. adds another reason, viz., the want of a definite rule to decide how much pelvic contraction indicates, and how much forbids symphiseotomy, followed by the immediate application of the forceps. He thinks it should not be done in cases where the conjugate is less than three to three and a half inches. The operation gives us a half-inch more space, and the forceps as much more, so that as a result, we have four inches in all. Dr. d'Erchia has succeeded, in a case of two and a half inches, in saving mother and child. The patient should lie on the back, with the pelvis elevated, the bladder empty, and the section be subcutaneous. After the operation the forceps should be used, and then gummed (or plaster) bandage be applied. The statistics are very favorable—19 operations, women saved 15, children 16. We cannot predict that this operation will be revived even with these modifications. With a pelvis of three

¹ Revue de Thérap. 2, 1876.

² Lyon Médical, Oct. 25, 1874.

or three and a half inches, the forceps or version will save an equal proportion of mothers, and a certain proportion of children, without the additional risks to the former attendant upon such an operation. Still, the operation may be held in reserve, especially in favor of the child.

In the operation of *craniotomy*, wounding the soft parts of the mother is one of the greatest dangers. To avoid this and to substitute the sense of sight for that of touch, Dr. Skene recommends the use of *Sims' speculum* when performing the operation. The head being thus exposed, a crucial incision is made, and the bones broken and removed without removing the scalp. This method certainly offers great advantages in performing an operation in which so few secure anything like dexterity.

As a substitute for craniotomy, Dr. Thomas¹ lately proposed to revive the operation of *gastro-elytrotomy*. He now reports a case. The woman was moribund near the end of pregnancy. The child was alive, and died in a few days from causes independent of the operation. The time of performing the operation was about five minutes, and the details surprisingly easy.

Dr. Skene has also reported a case of *gastro-elytrotomy*. The patient had been delivered once by version. The conjugate was $2\frac{3}{4}$ inches. The abdomen was opened along Poupart's ligament, the peritoneum carefully avoided, and the vagina opened; the os was dilated, and the child delivered by version. The child weighed ten pounds, and did well. The bladder was unfortunately opened—"the fault of the operator, and not of the operation." The patient had some inflammatory symptoms following, but ultimately did well. This is the first successful case to the mother, and is certainly a triumph of obstetric surgery.

In a second paper *on delivery in very narrow pelvis*, being a continuation of the first, Dr. J. C. Taylor² makes the following points:

1. That a mutilated child can be delivered with safety to the mother through a space $1\frac{3}{4}$ inches antero-posterior and $2\frac{1}{2}$ or 3 inches transverse diameter by craniotomy, cephalotripsy, or cranioclasm, when the vault has been destroyed, the face made to present edgewise, or the head sidewise.

2. That after cephalotripsy or cranioclasm, if necessary, version with propulsion from above the pubes—early performed, before the uterine forces are exhausted, is preferable to that just indicated.

¹ Am. Jour. Obst., May, 1875.

² Med. Rec., March 18, 1876.

3. That the cephalotribe or cranioclast cannot be considered as available tractors in cases of extreme contraction of the pelvis, but that other instruments become necessary to properly effect the delivery of the woman.

4. That the Cæsarean section should not be performed when contraction or deformity is present as stated above, unless demanded by other conditions and complications.

An editorial article in the *Obstetrical Journal* insists strongly on the necessity of the more general adoption of the so-called *Crede's method of delivery of the placenta* by suprapubic expulsion. It may seem useless to mention a method which is so generally adopted; but that this adoption is not universal, the editor proves by quoting from some recent writings on the subject. We mention the subject here, because we share the belief of the great efficacy of the method and of its usefulness in preventing hemorrhage.

Last year we called your attention to a long debate on the treatment of *post-partum hemorrhage*. It has still continued to occupy considerable attention. Dr. Levi Gros maintains that *compression of the aorta* is the most effectual means of promptly arresting such a flowing, and it may often preserve from certain death. This remedy is not new, and has few advocates.

Dr. Wm. Donovan, of Cork, maintains the usefulness of full doses of *Indian hemp*¹ (Tr. ʒxx.) This acts in a few minutes, and in his experience never fails. It also has the power of controlling and relieving metrorrhagia and profuse menstruation in a marked degree.

Dr. Trask² affirms the usefulness of intra-uterine injections of iodine in post-partum flooding.

He recapitulates in substance as follows :

1. A considerable proportion of the cases in which the injection of salts of iron has apparently saved life, have been those in which it accomplished this end, not in virtue of its local styptic action, but because of its power to excite reflex action, when cold, friction, etc., have failed.

2. That the coagulation of blood may form dangerous thrombi in the uterus, and that clots may collect in the uterus, and remain and decompose and give rise to septicæmia.

3. That there is evidence for believing that as an excitor of dormant reflex action Tr. iodine may be substituted for the iron with positive advantage, from its efficiency as an excitor, and from its antiseptic properties.

¹ Edinburgh Med. Jour., June, 1875.

² Am. Jour. Obst., July, 1875.

This plan of treatment was proposed and used many years ago by Dr. M. Dupierris, of Havana, and has lately been advocated by Dr. Emmet, and used by Dr. Harrison of this city. The arguments used by Dr. Trask are very convincing; and after the careful study which we gave the subject last year, when making our preceding report, we must give as our impression that Dr. Trask is right, and that any substance which, like iodine, has the power of exciting reflex motor power, is preferable to iron, which, while it acts in the same way, has another and dangerous power, viz., that of producing hard and firm coagula.

Dr. Parry,¹ after considering the subject of *epilepsy in pregnant women*, comes to the conclusion that they are not more liable to puerperal convulsions than healthy women. Labor in them is as a rule not more unfavorable than in healthy women. If convulsions do occur, the method of action is not determined. Again, pregnancy may be the cause of epilepsy. In these cases the fits rarely occur in labor, and the disease is stopped by parturition, but will almost always recur in succeeding pregnancies. Either form of epilepsy may result in the death of the woman.

Dr. Duncan² holds that the causative effect of Bright's disease in producing *puerperal eclampsia* is over-estimated. A temporary appearance of albumen in the urine is no certain indication of Bright's disease. Pregnancy itself produces a state similar to that found in chronic kidney affections. The women are more hydræmic, and there is an increase in the amount of urea in the blood; and at the same time there is a plethora of thin watery blood. The heart's action is probably increased to overcome the resulting contraction of the small vessels, and the increased arterial pressure. It does not seem wonderful that under these combinations of circumstances fits should occur, and that they should often appear to recur simultaneously with the pains.

The *treatment* is to empty the uterus; but, if the labor is only commencing, it should only be done if the symptoms are becoming desperate, such as fits, severe and more frequent, pale and cyanotic hue, breathing shallow and coma more profound. The bowels should be moved, and the urine drawn and examined. Bleeding is useful to tide over a crisis; chloroform and chloral are sometimes useful. If respiration be imperfect and much cyanosis exist, chloroform must be used with great caution.

Dr. Bonneville³ lays great stress on differentiating the various

¹ Am. Jour. Obst., Aug., 1875.

² Practitioner, April, 1875.

³ Arch. de Tocol., April, 1875.

kinds of uræmia from puerperal eclampsia, and says that a diminution of temperature occurs at the commencement in uræmia and an elevation in puerperal eclampsia. Towards the end of a fatal case the temperature is very low in uræmia, and rises very high in eclampsia.

Still another view of the *causation of puerperal eclampsia* is put forth by Dr. Galabin.¹ He draws the conclusion that there is much ground for the conjecture that the primary cause both of puerperal eclampsia and albuminuria is the presence of some injurious matter circulating in the blood; but that it is not sufficient to produce the convulsions until nephritis has actually commenced, although it may not have yet reached the stage of albuminuria. It is extremely unlikely that the injurious material in the blood should be developed so suddenly as to produce, directly and independently, both eclampsia and fully developed nephritis, within the space of a few hours. The fact that the albumen may not follow the fits until several hours, does not prove that nephritis is not the cause of the convulsions. Albuminuria is not necessarily the first effect of nephritis. Dropsy may appear before albumen, and so in this way loss of power to secrete solid matters may precede the appearance of albumen in the urine. In the cases in which there is never any albumen, the pathology would seem to be different and they are more nearly allied to ordinary epilepsy.

In the *Am. Obst. Jour.*, for Nov., 1875, Dr. Serdukoff of Moscow, Russia, has given us some clinical observations on the *mild forms of puerperal inflammation of the parametric tissues*. Inflammation of the cellular tissue surrounding the lower portion of the uterus and in the vaginal vault he has called paracervicitis—an abominable mixture, we may remark by the way—and distinguishes it from parametritis, when we have large tumors near the median or superior portions of the uterus, and also from phlegmon of the broad ligament. Inflammatory exudation is slight, pulse scarcely more than 90, temperature 101–105°; recovery usually rapid and certain.

This brings us, with propriety, to the subject of *puerperal fever*.

During the last eighteen months this subject has attracted a large share of attention. The London Obstetrical Society, having chosen as the subject of their annual debate, “the relations of puerperal fever to the infective diseases and pyæmia,” appointed Mr. Spencer Wells to open the discussion, and enlisted in it some of the very best talent, not only of England, but of this country. Thus the whole subject was thoroughly

¹ British Med. Jour., May 22, 1875.

sifted and resifted, and all that is known about it brought prominently forward, together with the relation of much valuable clinical experience.

Although the results of this debate show much difference of opinion on many important points, and might thus be deemed unsatisfactory and disappointing, still, on some points all have agreed; and it has served to show just what we do know and just how far our ignorance extends, thus forming a platform or foundation on which to base the further investigations and researches which must be made before the whole subject can be cleared up.

In trying to summarize what has been said on this subject during the period covered by our report, we shall try to give only the salient points, following in the main the order proposed by Mr. Spencer Wells. Dr. Priestley has already given a very satisfactory summary of the London debate, thus rendering our task proportionally easier. Other points, however, must be added.

Dr. Arthur Farre has *defined puerperal fever* to be "a continued fever, communicable by contagion, occurring in women after child-birth, and often associated with extensive local lesions, especially of the uterine system." Dr. Farre has explained this definition to be only for purposes of identification, and that it does not attempt to explain anything. On this subject there is great difference of opinion.

Dr. Snow Beck, for example, contends that this definition cannot be maintained in practice, while Dr. Fordyce Barker thinks it "absolutely perfect." It has the fault of including all the forms of infective continued fever which may attack the lying-in woman, whether they are peculiar to the puerperal state or not. It is not easy to define what is protean in form. This definition will answer if it be borne in mind that it includes a diversity of puerperal affections.

Is puerperal fever a specific disease? This is the turning-point of the whole discussion. The opinion most generally expressed, and now held almost to the exclusion of any other, is that puerperal fever is caused by septicæmia, autogenetic, or communicated. Leishman even has come over to this view, as have others who previously taught the opposite; while Dr. Fordyce Barker stands almost alone in defence—able, it must be admitted—of the theory of a distinct and specific fever, attacking puerperal women only.

The fact remains, says Dr. Priestley, that clinical investigation and pathological research have both in recent times been pointing in an opposite direction, and teaching that what has hitherto been called puerperal fever or fevers are but forms of

blood-poisoning or septicæmia, similar to those observed in other than puerperal patients, having, it may be, a diversity of origin, and intensified and modified it may be by the peculiarities of the puerperal state, but still essentially the same, and not constituting a pathological genus apart. It may be said, then, that puerperal fever, and fevers which are attended by high temperature and are commonly associated with extensive local lesions, are due to the inception of a morbid poison, which vitiates the blood, and which produces a great variety of symptoms, in accordance with the nature and intensity of the virus, the amount absorbed, the state of the patient when attacked, and a diversity of other conditions.

The origin of the poison may be either in the patient's own system, autogenetic, or "auto-infection" (Schroeder), or it may be imported from without, heterogenetic or "hetero-infection" (S.). In the first case, the poison is formed by a process of disorganization or death of tissue, "necrobiosis" (Virchow), as of a piece of placenta, decidua or blood-clot retained in utero, or a laceration in the parturient track may be the seat of decomposition.

The poison may be absorbed by the sinuses (Snow Beck), or by the lymphatics (Savage, Tilt). Undue relaxation of the uterine walls favors absorption, as does also previous loss of blood. The fetid lochia are held by some to play an important part in the production of the fatal symptoms. They may be made fetid by the introduction of the poison of any zymotic disease, and thus complicate the case. If the absorption of an autogenetic poison can take place simply from the placental site, how much greater is the danger when there is some rupture or laceration in the genital canal. As to the hetero-infective forms, the inquiry suggests itself, Whence is derived this potent poison? Is it always one and the same, or are there several poisons capable of producing different diseases in non-puerperal patients, but provoking generically the same results when introduced into the body of a lying-in woman. This is a most difficult problem. It brings us to Mr. Wells' second question: *The relation of puerperal fever to zymotic diseases.* As to the relation of scarlatina and puerperal fever, two views have been advanced: one, that there is no causative relation existing between them, and cases are cited where puerperal patients went through an attack of well-marked and distinct scarlatina without any symptoms of true puerperal fever. Again, Dr. Hicks and others, admitting the possibility of such cases as those mentioned, claim that the power of scarlatina in a puerperal woman is prone to produce what has been called puerperal fever, or a form of scarlatina so wanting in its

usual characteristics as to be unrecognizable. Olshausen¹ has investigated the subject, and concludes that there is no reason to think that scarlatina poison will produce anything but scarlatina in a puerperal woman. The typical picture of scarlatina he finds to be somewhat modified. The angina is generally or universally slight or absent. The period of incubation varies greatly, the disease not manifesting itself very soon after delivery, no matter when infection may have taken place; miliary vesicles are also of great frequency. He holds, however, that even admitting that the S. poison may produce true puerperal fever, still we are then only able to infer an etiological relationship between the two diseases, each one retaining its identity.

The relationship existing between puerperal fever and erysipelas is, however, clearly recognized; and while the identity of the diseases is questioned, the identity of the poison in many cases is clearly proved. A most striking example of this was published by Dr. S. N. Squire.²

A relation between puerperal fever and diphtheria has also been shown to exist. The late Prof. Martin, of Berlin, came to regard the diphtheria process in the genitalia as the only essential element of puerperal fever. Parry, Lusk, and others have described epidemics where there was the prevailing lesion. Others, again, consider typhus as the prevailing "true characteristic of epidemic puerperal fever." (Marsh.) The relation existing between puerperal fever and the zymotic diseases then seems to be still unsettled, and while there are strong reasons for thinking that there is a direct etiological connection, still the exact relation existing between them is not explained or fully understood. Another point is that the poison capable of producing what we call puerperal fever is multiple. The predisposing causes have been held to be: the peculiar physiological condition of the puerperal woman, the artificial habits of society lowering the general tone, also sewer-gas, pre-existing ailments, depressing mental conditions, etc.

Whether *puerperal fever* is ever *really epidemic* or endemic, that is, dependent upon general atmospheric or other influences which may pervade a community, as distinguished from the miasms of unhealthy hospitals, or the propagation of disease by inoculation or contagion, is still a debated point. The weight of argument seems to be, however, in favor of the existence of epidemics of puerperal fever. The bad influence of crowding in badly-tended hospitals is only too well confirmed.

The *contagiousness of puerperal fever* has ceased to be a

¹ Arch. für Gynäk, B. ix., H. 2.

² Brit. Med. Jour., May 22, 1875.

question, for the direct proofs of its contagiousness have accumulated to such an extent that denial is no longer possible.

But are all forms equally contagious? Dr. Barnes and Dr. Barker agree that the autogenetic forms proper do not appear to possess active powers of propagation. The heterogenetic forms are, however, very contagious; or, as Dr. Priestley puts it, "the most acute forms running to a rapid termination are most likely to be highly contagious; those which run a more chronic course and are attended by secondary complications, least so."

The relation of *bacteria to puerperal fever* is not yet settled, and until their part in the production of disease in general is better understood, it were idle to form any theory of their connection with any disease in particular.

The *prevention* is, after all, the end and aim of all our inquiries. From what we have already seen, the method of guarding a puerperal woman from noxious influences consists in carrying out all those measures which prevent the formation of poisonous material in her own system, and which secure her isolation from all contagion from without. It is beyond our limits to give here all the precautions which it is recommended to take in order to prevent the inception of this most distressing disorder.

The weight of opinion seems to be in favor of the giving up of obstetric practice when one chances to meet with an acute case. Certainly, many well-attested facts show the possibility of the physician being the bearer of the contagion, not only from other cases of puerperal fever, but from erysipelas, and possibly scarlatina, diphtheria, typhus, etc. Our duty in the premises is then plain; how long the seclusion should last is uncertain.

The *treatment*.—Here we have little new to offer. The necessity of thoroughly cleansing by antiseptic injections the *utero-vaginal* canal cannot be too deeply impressed upon the mind of every practitioner. Dr. Playfair, in his new work on obstetrics, insists strongly on this point. In puerperal peritonitis Dr. Netter¹ thinks the treatment will be changed, and a mode of treatment derived from the experience of ovariotomists be adopted. He proposes to wash out the abdominal cavity, through an opening, with abundant quantities of warm water, so as to dilute and render harmless the poison which is the active cause of the inflammation.

¹ Rev. Méd. de l'Est, Feb. 15, 1875.

REVIEWS AND NOTICES OF BOOKS.

A TREATISE ON THE SCIENCE AND PRACTICE OF MIDWIFERY. By W. S. PLAYFAIR, M.D., F.R.C.P., Prof. of Obstetric Medicine in King's College, London, etc. In two volumes. Vol. I., pp. 397; Vol. II., pp. 385, with 166 woodcuts and two photo-lithographic plates. Cloth. Smith, Elder & Co., London. 1876.

THE SAME, in one volume of 576 pages; leather, with the same illustrations. Philadelphia: Henry C. Lea, 1876.

THE appearance of a new work on Obstetrics in the English language would seem to prove that the recent text-books by Leishman, Meadows, and Byford (the only three English Midwiferies which have appeared during the past ten years, so far as we are aware), have not as yet completely filled the void so plainly felt in the modern medical literature of our language. Whether Dr. Playfair has succeeded in producing an "epitome of the science and practice of midwifery, which embodies all recent advances," and by so doing has surpassed Leishman, whose work alone of the above mentioned can be ranked with it, is a question perhaps not easily answered, especially when we consider that Leishman, in his 766 pages (Am. ed., with Parry's notes), is enabled to go far more into detail and discuss topics, such as the History of Midwifery, which Playfair has omitted as beyond the scope of his "epitome." However this may be, the opinions and theories of a man so well and favorably known in the field of obstetrical practice as Playfair, are always entitled to attention and consideration; and such of them as seem to us original or worthy of acceptance, it will be our endeavor to point out and discuss in this review.

In CHAPTER I., on the Bony Pelvis, the occurrence of a certain amount of mobility in the pelvic joints in certain positions of the body, even in the unimpregnated condition (while straining during defecation), but particularly during gestation, is admitted. Thus the sacral base undergoes a backward movement during the first stage of labor, by which the superior strait is enlarged; but when the head engages into the pelvic outlet the base of the sacrum is tilted forward, its apex upwards, and the outlet thus enlarged antero-posteriorly; an elevation or depression of the symphysis pubis is permitted by the slight motion of the ilia on the sacrum, and the instinctive positions assumed by

the parturient woman during the various stages of labor are explained by these observations. Chapter II., on the Female Generative Organs, contains a very good account particularly of the lining membrane of the uterus, based to a great extent on the late researches of Dr. John Williams. Speaking of the ovary, the recent observation of Waldeyer is mentioned, that the investment of that organ is not strictly peritoneal, but consists of columnar epithelium separated from the peritoneum at the base of the organ by a circular white line, and differing from the epithelium lining the Fallopian tubes only by being destitute of cilia; further, the researches of Pflüger, Waldeyer, and other German writers are referred to, according to which the Graafian follicles are formed in early fœtal life by the cylindrical inflections of the epithelial covering of the ovary, which dip into the substance of the gland, anastomose and divide themselves off into portions, within which the ova are developed from the original ovarian epithelium lining these tubes.

As regards the connection between OVULATION and MENSTRUATION, Playfair concludes that, notwithstanding the occurrence of menstruation after double ovariectomy and the similarity between menstruation and the rut of animals, at which period only the latter conceive, whereas in the human female conception occurs during the *intermenstrual* period, still the weight of evidence remains in favor of the ovular theory of menstruation. As this question more properly belongs in a Physiology or Gynecology proper, of course the discussion of the various conflicting views cannot find room here.

The section on PREGNANCY, including conception and generation, signs and diagnosis of pregnancy, abnormal pregnancy, the diseases of pregnancy, abortion, etc., is exceedingly well handled, and contains among other things various diagrams illustrating the placental circulation, the influence of gravity and shape of the uterus on the position of the child, etc., which are new to us in works on obstetrics. In speaking of the anatomical structure of the placenta, the conflicting views of Reid, Schroeder van der Kolk, and Goodsir, Farre, and, more recently, Braxton Hicks and Ercolani, are mentioned, who differ as to the manner in which the communication of the fœtal with the maternal vessels takes place. While the first four observers agree in considering the villi of the fœtal chorion to be bathed in the maternal blood contained in large sinuses, only differing as to the extent and exact mode of investment of the chorion villi, the two last dispute the existence of the maternal sinus system in the placenta altogether. Hicks supposes that the curling arteries terminate in the decidua serotina, to which the chorion villi are firmly attached; the fœtal

portion of the placenta is thus not surrounded by maternal blood at all, and nothing exists between the villi except a small quantity of serous fluid. The change in the foetal blood is effected by endosmosis; the follicles of the decidua probably secrete a fluid which is poured into the intervillous spaces for absorption by the villi. Ercolani's theory is similar; he maintains that the maternal portion of the placenta is a new formation, strictly glandular and not vascular in structure, which is formed by the submucous connective tissue of the decidua serotina, dips down into the placenta and forms a sheath to each of the chorion villi which it separates from the maternal blood. This new glandular structure is described as secreting a fluid, termed "the uterine milk," which is absorbed by the villi of the chorion just as the mother's milk is absorbed by the villi of the intestines, and constitutes the food of the foetus. Both these theories are refuted by Prof. Turner, who found by careful injection with gelatine, that the old idea of a maternal placenta and the existence of a maternal sinus system is probably correct.

The detection of the foetal position by abdominal palpation is discussed in less than a page and illustrated by the only diagram of the proceeding we remember to have seen in any text-book of obstetrics; in this meagre treatment of an exceedingly important subject, however, Playfair only follows the precedent of all other obstetrical authors, excepting only the Germans, who alone have shown a proper appreciation of this valuable manipulation for the diagnosis and treatment of obstetric cases.

The persistence of the cavity of the cervix at its normal length of about one inch during the whole pregnancy until within the last fortnight preceding delivery, is illustrated by a diagram of a cervix taken from a woman dying in the eighth month of pregnancy; the real shortening which takes place during the last fortnight consists in a gradual obliteration of the cervical cavity proper (a merging of the cervical cavity into that of the corpus uteri, we presume the author means; but the distance between the external and the internal os remains always the same, one inch or thereabouts), and is due to incipient uterine contractions preparing the cervix for labor (is, in fact, the commencement of the first stage of labor). Among the signs of pregnancy we find noted a symptom first described by Dr. Adolph Rasch, of London, and valuable in the diagnosis of *early* pregnancy (where such signs, indeed, are most needed), viz., the detection by the examining finger of fluctuation through the anterior uterine wall, depending on the presence of liquor amnii. Whether it is possible, as Rasch asserts, to distinguish by this means a uterus enlarged by

pregnancy as early as the second month from one enlarged by other causes (areolar hyperplasia, sub-involution, tumors) appears to us rather doubtful. Although we, like other physicians, have frequently been called upon to make the diagnosis of early pregnancy (that is, during the first six to eight weeks), only in one instance were we able to assert positively that pregnancy existed, and that was at the sixth week, in a case where, by frequent and recent examinations, the size of that particular unimpregnated womb was well known to us. Distinct fluctuation we have never detected; a certain degree of doughiness and softness of the anterior wall, however, often, in cases afterward proved to be pregnancy. Playfair himself thinks that too great an experience in vaginal examinations is necessary to render this sign generally useful.

Besides the foetal heart, uterine and umbilical souffle, and the sounds resulting from the movements of the foetus in the liquor amnii, two other sounds are described, which we think are but little known. One is a rustling sound, said by Stoltz to be audible in cases where the foetus is dead, and attributable to gaseous decomposition of the liquor amnii; the other is a sound heard after the birth of the child, and referred by Caillant to the separation of the placental adhesions. It is described as a series of rapid, small, scratching sounds, and can be produced by crushing the placenta in the hand outside of the body. Both of these sounds are more or less problematical, and for this very reason invite further investigation and report.

In summing up the treatment of extra-uterine pregnancy, the author advises the introduction of an aspirator needle through the roof of the vagina, and the removal of the amniotic fluid as soon as the presence of a peri-uterine tumor and the usual symptoms of pregnancy point out the existence of that anomaly. If the aspirator confirms the diagnosis of extra-uterine foetation, and the cyst is of considerable size, the pregnancy having advanced beyond the second month, a more radical operation might be resorted to, such as that successfully practised by Dr. Thomas (opening the sac per vaginam with the galvano-caustic knife and removing the foetus). If the case could be early and positively diagnosed as one of tubal pregnancy, the operation of removal of the entire Fallopian tube and its contents by gastrotomy would be perfectly justifiable; unfortunately the uncertainty of the diagnosis has as yet rendered this practice too hazardous. Has rupture of the cyst once occurred, Playfair maintains that it is perfectly justifiable, if time allows, to perform gastrotomy, sponge away the effused blood, place a ligature around the lacerated tube, and remove it with its contents; compression of the abdominal

aorta could be resorted to when the patient is first seen, and transfusion if necessary after the hemorrhage has been arrested. As death does not usually follow the rupture in these cases for several hours, but is almost absolutely certain to result very soon, there is nothing lost, but often ample time afforded for the operation, which is the only, if slender, chance the patient has. We are glad to see the strong and decided opinions expressed by the author on this question of progressive abdominal surgery, and believe he is but in accord with a gradually growing conviction among the more enterprising members of the profession.

A cardinal rule, both in primary and secondary gastrotomy for abdominal or any form of extra-uterine pregnancy, is never to attempt to remove the placenta. Many of the failures after operating can be traced to a neglect of this rule, an infringement of which is almost sure to be followed by profuse and generally uncontrollable hemorrhage. The lower angle of the wound should be left open, a drainage-tube introduced, and antiseptic injections made into the ovisac, until the placenta is detached and discharged voluntarily, which may not occur for days and even weeks. Of course, the danger of septicæmia is great, but small compared with that arising from forcible removal of the placenta. The question, whether in abdominal fœtation, primary gastrotomy at term should be performed, and the life of the fœtus saved (that fact having been proved by auscultation), with at least equal chances for the recovery of the mother as though she were allowed to remain exposed to the dangers of peritonitis, exhaustion, or septicæmia during the gradual elimination of the fœtus; or whether the operation should be deferred until urgent symptoms after the death of the fœtus render secondary gastrotomy imperative, is one to which a general answer cannot be given, as each individual case must point out the course to be pursued. Still, with our present experience in ovariectomy, the balance would rather lie in favor of the primary operation. This is the exact reverse of the conclusion arrived at by the late Dr. Parry in his recent work on *Extra-uterine Pregnancy*. In this whole interesting chapter on *Abnormal Pregnancy*, we particularly commend the clearness and decision with which the principles of treatment of extra-uterine fœtation are expressed.

The *Diseases of Pregnancy* occupy forty pages, and are discussed in so exhaustive and instructive a manner, in accordance with the size of the work, as to deserve the highest praise.

In speaking of the reposition of the retroverted gravid uterus, the author, after the failure of fluid pressure in the vagina, recommends that the patient be anæsthetized, placed in the ordinary obstetric

position (left lateral in England), and efforts made to lift up the fundus uteri with the fingers, or, if necessary, the whole left hand in the rectum, the right hand pulling down the cervix per vaginam. This is very rational, and doubtless usually effective treatment; but we do not agree with the author when he dismisses the hand-and-knee position as an auxiliary in reposition, with the brief remark, that it "prevents the administration of chloroform, which is of more assistance than any change of position can possibly be." We are convinced that there are but few cases of retroversion of the gravid uterus which will not admit of reposition by gentle manual means, either per vaginam or rectum, if the patient be placed in the *knee-and-breast* position so as to get the benefit of the greatest amount of visceral gravitation away from the pelvis (of course, we mean reducible cases, not such in which a force sufficient to produce miscarriage must be exerted to effect that object, which indeed might occur not infrequently after Dr. Playfair's reposition under chloroform, perfectly proper though it be).

Playfair, in discussing the influence of reproduction on phthisis, says that "pregnancy has no retarding influence on co-existing phthisis, nor does the disease appear necessarily to advance with greater rapidity after delivery." As regards the retarding influence he certainly is correct, but concerning the promotive effect of utero-gestation on phthisis he evidently has overlooked the extensive researches of Lebert, of Breslau, on the subject, who, among other conclusions, says: "Abortion, pregnancy, and puerperality, on an average in at least three-fourths of the cases, promote the development and rapid progress of pulmonary phthisis. The puerperal state may not only confirm an existing predisposition, but relatively acts even worse than pregnancy, and more commonly still hastens the fatal termination," etc.

The peculiarly pernicious influence of acute pulmonary affections (especially pneumonia) on pregnant women, and the increased danger from organic disease of the heart during gestation, owing to the physiological hypertrophy of that organ, and the greater quantity of blood in the system at that time, are briefly referred to by the author. We confess we expected to find a somewhat more extended discussion of these subjects, which have of late years been investigated by Gusserow, Wernich, Späth, Spiegelberg, Blot, Fritsch, and others. So very little is said on these two questions in works on Obstetrics, even the most recent, that we cannot help thinking the author does not quite reach his self-imposed standard of an "epitome of all recent advances," in passing them over so superficially.

A review of the therapeutic indications in cases of ovarian tumors

complicating pregnancy, induces Playfair to conclude, comparing the results obtained by Spencer Wells and others, with those following the induction of abortion and premature labor, that the best chance for the mother, and certainly for the child, is to resort to ovariectomy during gestation, as recommended by Wells, who removed the tumor in five cases, one combined with Cesarean section, in the other four of which the pregnancy went on to term. Of five cases, which were not interfered with and either went on to term or were delivered spontaneously before term, three died.

The appropriate specific treatment of syphilitic women during pregnancy is, in our opinion, very properly recommended by the author, who very justly says that, "so far from pregnancy contra-indicating mercurial treatment, it rather is a reason for insisting on it more strongly."

The cut on p. 267, representing a case of "intra-uterine amputation of both arms and legs," is incorrectly named; it should read, "intra-uterine amputation of both arms and the *right* leg," the left leg being, to our mind, evidently deformed by intra-uterine arrest of development and not amputation, as is conclusively shown by the termination of the stump of that leg, not in a circular cicatrix, as in the arms and the other leg, but in a flipper-like hand with five distinct nodules corresponding to the toes. According to Reuss (Scanzoni's Beiträge, 1869), and our own examination of numerous old diagrams of this deformity, many similar errors have occurred and doubtless still occur.

In discussing the determining causes of labor at term, the author, after mentioning the various theories (reflex sphincter, distention of the uterus, fatty degeneration of the decidua, ovarian theory or periodical return of menstruation during pregnancy), concludes that the true reason is not yet known why labor should come on at a fixed period. In this he doubtless is correct; but he is justified neither by facts nor the prevalent opinion in saying that there is no proof of the continuance of periodical changes in the ovary during pregnancy.

The peculiar manner of expulsion of the placenta when left to nature, as more recently revived by Duncan, namely, edgeways, its uterine and detached surface gliding along the inner surface of the uterus, is described by Playfair, and illustrated by a diagram; only when expression or traction are employed, is the organ inverted like an umbrella.

In place of the Ritgen-Goodell method of supporting the perineum or rather relaxing it, by hooking the perineum up with two fingers in the rectum and pulling it forwards towards the pubes, while the

thumb controls the progress of the head through the vulva, Playfair recommends what he considers a less unpleasant (we think, also less efficacious) plan of obtaining the same result, which however is not original with him, but which is uniformly practised in the Vienna wards, and which we ourselves frequently employed before visiting Vienna. The thumb and forefinger of the right hand are placed along the sides of the perineum when it is greatly distended by the head, and during the height of the pain the perineum is pushed forwards over the head, while the tips of the fingers at the same time press upon the advancing vertex. The sudden and forcible stretching of the perineum is thus prevented, and the chance of laceration reduced to a minimum. The less direct pressure is applied to the perineum, the better.

We are glad to see the author strenuously advising immediate union of all perineal lacerations with silver-wire suture, the more so, the larger the rent is. It is true that smaller ruptures will often heal spontaneously, but this is not always the case, and healing is almost certain to follow if the edges are brought together at once; an always unpleasant and often severe secondary operation may thus be saved the patient, and in our opinion it is the duty of the physician to leave as little as possible of the future health of his patient to chance. The objections to the immediate operation of ruptured perineum have always seemed to us too frivolous or trivial to influence intelligent judgment.

The application of a binder after delivery is considered by Playfair to be of undoubted utility; it gives a comfortable support to the abdominal walls, keeps up a certain amount of pressure on the uterus, and tends to restore the figure of the patient. If the binder is *properly* applied so as actually to fulfil these indications, we certainly are of the same opinion.

A pulse of 100 or more within an hour or two after delivery should warn the physician of the probable danger of hemorrhage, and induce him to stay by his patient until that symptom has disappeared.

The administration of chloral during the first stage, and of chloroform during the remainder of labor, is highly recommended. A drachm of chloral, in fifteen-grain doses, every twenty minutes until somnolence is produced, is all that is usually required. Chloroform should always be administered intermittently during the pains only, never continuously. In this intermittent administration lies the peculiar safety of chloroform during labor; no case of death resulting from its use at that time having been reported. (Dr. Wm. T. Lusk has recorded two cases in which sudden syncope occurred during the

inhalation of chloroform in labor, from which the patients were resuscitated only with great difficulty, one of them so imperfectly that she died in twenty-four hours; both of these, to be sure, were operative cases.) In cases of spasmodic contraction and rigidity of the cervix, chloral is much to be preferred to chloroform.

In describing the occasionally exceedingly difficult diagnosis of face presentation, Playfair omits to mention the method proposed by Hecker (whose views on the dolicho-cephalous form of the cranium as a cause of the face presentation he quotes), of ascertaining the presentation by external palpation. If the face presents at the superior strait, the palpating fingers will detect immediately above the pubes, on the side where the forehead and crown is, a hard, firm, rounded body; on the other side, however, an indistinct irregularly soft substance corresponding to the neck and thorax. This condition is perfectly recognizable, and we have repeatedly diagnosed face presentations by this examination alone before proceeding to indagation.

The rotation forward with the forceps of a head in an occipito-posterior position is very properly discountenanced as useless and dangerous to both mother and child, notwithstanding its former recommendation by Tyler Smith and Scanzoni. Use traction only, and if the head rotates voluntarily in the forceps, well and good; if not, extract with face to the pubes, being especially careful of the perineum. Rotation of the head, however, is not necessarily accompanied by a like movement of the forceps, with their convexity forward and points backward, as Playfair asserts; we have repeatedly seen the head make a rotation of one-third to one-fourth of a circle until the occiput appeared under the symphysis, *within* the forceps, which were applied to the sides of the pelvis, although not to the sides of the foetal head. The recommendation of straight forceps, to obviate the danger to the soft parts of the mother in these cases, seems to us, therefore, superfluous.

In accordance with the growing conviction among the majority of scientific obstetricians of the present day, Playfair advocates the prevention of the undoubted danger arising to both mother and child, which is in proportion to the extent of the undue prolongation of the labor, by the frequent application of the forceps, which, it is needless to say, should be employed only by the experienced, who know when and why to interfere, and not by rash and uninstructed operators, whose bungling and ill-timed interference has justified the old maxim, that "meddlesome midwifery is bad." Dr. Hamilton, of Falkirk, uses the forceps on an average in every seventh or eighth case, and has thus succeeded in delivering seven hundred and thirty-one succes-

sive children without a single still-birth, a result unprecedented in obstetric history.

We heartily concur in the doctrine (the second part of which, there is every reason to believe, is ignorantly and recklessly violated every day), that "ergot should be chiefly used for the purpose of exciting uterine contraction after delivery, when its peculiar property of promoting tonic contraction is so valuable, and that it should rarely, if at all, be employed before the birth of the child." As a substitute for ergot in tedious labor, the systematic use of external uterine pressure is recommended; which, by the way, was not first brought before the profession by Credé, as Playfair has it, but by Kristeller, of Berlin, who published his method of "*Expressio Fœtus*," in the *Berlin kl. Wochenschrift*, No. 6, 1867. (Credé reported his system of *expressing the placenta* in 1853.) We took occasion, immediately after the appearance of Kristeller's paper, to experiment with the method, but found that the pressure, if forcible and protracted, as it should be to be of any service (although applied at intervals to imitate regular pains), was both too painful to the woman and exhausting for the operator, and, except in the easiest cases, ineffectual in expelling the child. We do not think that, as an expulsive agent, it can be compared with ergot, and should much prefer to use the forceps in suitable cases, as neither more painful nor laborious, but much more efficacious. As an auxiliary and incentive to feeble pains, intermittent external pressure no doubt is an exceedingly valuable agent.

Playfair substantially agrees with the rule, laid down by Reimann, in his paper on "The Simultaneous Entrance of the Heads of Twins into the Pelvis" (published in this number), viz., in breech and head cases, to extract the second child with the forceps, recommending, in addition, however, to decapitate the first child.

The length of the argument on the preference of forceps or version in contracted pelves of three inches conjugate and over, prevents our quoting more than its conclusion, which reads in favor of the forceps, except when the head cannot be sufficiently steadied at the brim to permit of its application. When the contraction is below 3'', or when forceps or turning (which latter should never be omitted if the child be still alive after the unsuccessful use of the forceps), have failed, only craniotomy or Cesarean section are left.

An excellent chapter is that on *Placenta Prævia*, the sense of which we cannot give better than by quoting the author's conclusions *verbatim*:

"1. Before the child has reached a viable age, temporize, provided

the hemorrhage be not excessive, until pregnancy has advanced sufficiently to afford a reasonable hope of saving the child. For this purpose the chief indication is absolute rest in bed, to which other accessory means of preventing hemorrhage, such as cold, astringents, pessaries, etc., may be added.

"2. In hemorrhage occurring after the seventh month of utero-gestation, no attempt should be made to prolong the pregnancy.

"3. In all cases in which it can be easily effected, the membranes should be ruptured. By this means uterine contractions are favored, and the bleeding vessels compressed.

"4. If the hemorrhage be stopped, the case may be left to nature. If flooding continue, and the os be not sufficiently dilated to admit of the labor being readily terminated by turning, the os and the vagina should be carefully plugged, while uterine contractions are further promoted by abdominal bandages, uterine compression, and ergot. The plug must not be left in beyond a few hours.

"5. If, on removal of the plug, the os be sufficiently expanded and the general condition of the patient be good, the labor may be terminated by turning, the bi-polar method being used if possible. If the os be not open enough, it may be advantageously dilated by a Barnes' bag, which also acts as a plug.

"6. Instead of, or before resorting to turning, the placenta may be separated around the site of its attachment to the cervix. This practice is especially to be preferred when the patient is much exhausted and in a condition unfavorable for bearing the shock of turning."

There is great truth, in our opinion, in the author's remark that post-partum hemorrhage is generally a preventible accident, and often due, when it occurs, to careless management of the patient immediately after the birth of the child, to the neglect of pressure on and friction of the uterus until firm, permanent contraction ensues, and the omission to give a prophylactic dose of ergot. A very good term—introduced by the author for a condition which we have repeatedly met with, and which doubtless is familiar to most practitioners, viz., a retention of the placenta in a sac formed only by a portion of the uterus, the placental site being apparently more or less paralyzed, while the remainder of the body is firmly contracted—is "encystment" of the placenta. The wholesome truth, enunciated by Carl Braun, that "abnormal adhesion and hour-glass contraction are more frequently encountered in the experience of the young practitioner, and diminish in frequency in direct ratio to the increasing years," bears repetition.

We thoroughly endorse Dr. Playfair's commentary on one of the signs given by Barnes for adherent placenta, viz., the unusual prominence of the uterus at the place of placental attachment, instead of the whole organ presenting a globular form—that it may accompany non-detachment of the placenta unaccompanied by adhesion. We have frequently seen and felt—and indeed so can any one in almost every labor—the exact place of attachment of the placenta before its normal expulsion by expression, by the hemispherical protrusion of the uterine horn in which it was seated, the remainder of the uterus being firmly contracted.

The very simple, concise, and proper rules of treatment, after rupture of the uterus, are: 1. If the head or presenting part be above the brim, and the fœtus still in utero—forceps, turning or cephalotripsy, according to circumstances. 2. If the head be in the pelvic cavity, forceps or cephalotripsy. 3. If the fœtus have wholly, or in great part, escaped into the abdominal cavity—gastrotomy (the chances of which operation have been shown by Jolly's statistics to be at least three times as great as when the usual practice of passing the hand into the abdominal cavity, drawing the fœtus back into the uterus through the rent and extracting it *per vias naturales*, is followed).

The use of the *left* hand in performing version is laid down as a rule by Playfair, because it is more convenient, its dorsal surface adapting itself better to the curve of the sacrum, and, what appears to us a more potent reason, because the right hand is required to operate on the fœtus through the abdominal walls.

We quite agree, from personal experience, with Dr. Playfair's recommendation in arm presentations, to bring down, if possible, the knee furthest from and opposite to the presenting arm, because by this means the body of the child is turned round on its own longitudinal axis, and the presenting arm or shoulder more easily withdrawn from the os. There are, of course, many cases in which it makes no difference which foot is seized; but we have lately met with one case in which the impossibility of seizing the farthest leg did make the greatest difference, and converted the version from a presumably easy one to almost the most difficult we ever had occasion to perform.

We regret to see that Dr. Playfair has not been able to subordinate his patriotic feelings to actual facts, in speaking of the method of version by combined external and internal manipulation, the invention of which he ascribes solely to Dr. Braxton Hicks; whereas it has been, we believe, definitely settled that to Dr. M. B. Wright, of Cincinnati, belongs the priority of this operation, Dr. Hicks having merely re-described it (independently, no doubt) and popularized

it six years later. (See Prize Essay on Difficult Labors and their Treatment, by M. B. Wright, 1854; Braxton Hicks, *Lancet*, July 14th, and 21st, 1860, and Trans. London Obst. Soc., Vol. V., p. 219, 1863; also Am. Jour. Obst., Vol. VI., 1, 1873, and "A Century of Am. Medicine, Obstetrics, and Gynecology," by T. G. Thomas; Am. Jl. Med. Sc., July, 1876, p. 148.)

Dr. Playfair, in our opinion, very properly says that long forceps are suitable to all cases of forceps delivery, and that the short forceps, unless for reasons of mere portability, are entirely unnecessary. "The stronger instrument can be employed with quite as much delicacy and gentleness as the weaker." Simpson's forceps appears to be the author's favorite. Whether the position on the side, adopted in England for ordinary confinements and forceps operations, is actually superior to the dorsal position in the latter class of cases, appears doubtful to us; for the performance of version we are, however, willing to concede the point.

Playfair agrees with one of our highest native authorities, Dr. Wm. Goodell, in restricting the use of the vectis to the rectification of certain malpositions of the head, especially occipito-posterior presentation, in which cases it is occasionally of great utility.

The antiquated cranioclast of Sir James Simpson is, we think, much too highly rated by Dr. Playfair, who says that it admirably fills the indications of breaking away portions of and extracting the perforated skull. That it is nothing more than an ordinary bone-forceps, is now generally admitted; as an instrument of extraction of the whole skull after craniotomy, it is almost absolutely useless. Had Dr. Playfair bestowed the above encomium on the cranioclast as improved by Carl Braun, of Vienna (see this Journal, Vol. VI., p. 13), where it is universally employed instead of the cephalotribe, we should have endorsed his words; as it is, we cannot refrain from expressing our surprise at the almost marked omission of Braun's instrument, to which not even the slightest reference is made. The national predilection is again somewhat too pronounced in this chapter, nearly all the instruments described being British, even to the exclusion of another continental appliance, the curved trephine perforator of Carl Braun, improved from the original strait instrument of Kiwisch, which certainly is safer, and, we think, no more difficult to work, than the old-fashioned scissors. The disadvantage urged against the trephine of "simply boring a hole in the skull, instead of splitting it up," is precisely one of the advantages claimed for it by its inventor and advocates, who contend, very justly, that the sharp points and spiculæ of bone produced by the splitting action of

the scissors are liable to wound the vagina during the extraction with the cephalotribe or cranioclast, unless the tedious and delicate operation of removing them one by one, be first performed.

The operation of cephalotripsy is highly recommended (Braxton Hicks' cephalotribe being, of course, the most perfect instrument), and its extension in Great Britain prophesied. With this opinion we are not disposed to disagree, although we think that the Vienna cranioclast will answer equally well, and prove less bulky and liable to slip—the great objection to the cephalotribe in most cases.

As long as craniotomy is practicable, it should be performed in preference to Cesarean section. The limits of craniotomy may be said to be from $2\frac{3}{4}$ to 3 inches antero-posterior diameter in the one, and $1\frac{3}{4}$ inches in the other direction. This question of craniotomy or Cesarean section in extreme cases of pelvic deformity is still *sub judice*; we doubt whether the latter operation, performed on a healthy woman and at an early stage of labor, would not give a better percentage of recoveries than craniotomy, done, as is usually the case, on a patient more or less prostrated by a protracted confinement and various attempts at instrumental delivery.

In designating the operation of gastro-elytrotomy, revived by Dr. T. G. Thomas, a theoretically promising operation, Dr. Playfair evidently was still unacquainted with the successful case reported by Dr. A. J. C. Skene, of Brooklyn. (This Journal, Vol. VIII., p. 636, Feb. 1876.)

The separate chapter on Transfusion, covering twelve pages, is a feature found neither in Leishman's nor any other obstetrical text-book with which we are acquainted. Inasmuch as, in the majority of cases, transfusion has been performed for post-partum hemorrhage, a chapter of this kind does not appear out of place in this work.

The chapters on the Puerperal State and its Diseases are exceedingly well written, and show at least in certain portions (The Normal Puerperal State, Puerperal Eclampsia, and Insanity) a thorough acquaintance with recent literature, both domestic and foreign. The normal fall in pulse and temperature immediately after labor is referred to. As might be expected, Dr. Playfair is an advocate of the rational modern plan of putting a puerpera on a nourishing diet almost immediately after delivery. "The best guide in this matter are the feelings of the patient herself"; if she be disinclined to eat, do not urge her, but if she be hungry, give her whatever easily digestible food she desires.

With the author's advice, however, to keep the puerpera as long as possible in the recumbent, horizontal position, in order to favor proper

involution of the uterus, we cannot agree. We are much more disposed to believe in Dr. Goodell's method, of allowing the woman to move about in bed as much as she feels inclined during the first few days, and to sit up in an easy-chair, if so disposed, on the fourth or fifth day after delivery. We think that retention of the lochia, consequent distention of the flaccid posterior uterine wall, retrodisplacement, and consecutive defective involution, not to speak of general debility, are all more prone to follow the prolonged uninterrupted recumbent position than if pelvic circulation be assisted and venous gravitation avoided by a frequent change of position.

The existence of milk-fever, as a normal accompaniment of the puerperal state, is pronounced more than doubtful, although in a small minority of cases there is an appreciable amount of disturbance about the time the milk is formed, the connection of which with lactation is proved by the relief following the emptying of the breasts. It certainly occurs more frequently in delicate women, especially those who, according to Graily Hewitt, are kept on deficient diet after delivery, which observation accounts for the comparative rarity of febrile disturbance in connection with lactation in these days of good nourishment during the puerperal state.

Dr. Playfair is enthusiastic in favor of Lister's antiseptic treatment during the incision and after-treatment of mammary abscesses. He says that, instead of taking months to heal, the abscess will surely be cured in a few days, and that nothing in his whole professional career has given him more satisfaction than the application of this method to abscesses of the breast.

All confusion and misunderstanding as to the nature of the disease, commonly known and described as "Puerperal Fever," is at once avoided, and Dr. Playfair's own view of the character of the affection announced by the heading of the chapter, "*Puerperal Septicæmia*." He denies that the disease is in any way specific or peculiar to the puerperal state, and believes it to be practically identical with surgical pyæmia or septicæmia. Here, at last, we have a short and decided expression of opinion, free from all verbiages and conjectures. For the reasons which influence the author's opinion, we refer the reader to the text itself.

The chapter on Puerperal Venous Thrombosis and Embolism is one of the best, certainly the most original one, in the book. The author points out the distinction between these two affections, *thrombosis* of the right side of the heart and pulmonary arteries being, in his opinion, a primary local affection, the blood clot being, in fact, formed *in situ*; while in venous *embolism* it has been carried from some distant throm-

bosis to obstruct the same vessel. That a primary formation of a blood clot, a spontaneous coagulation of the blood, in the right side of the heart and pulmonary arteries (a possibility hitherto always denied by Virchow and his followers, who hold that an embolus must necessarily be the nucleus around which secondary deposition of fibrine takes place), may and does actually occur in these cases of sudden death during the puerperal state, is maintained by Playfair on various grounds, both rational and clinical. The peculiar condition of the blood during gestation, intensified as it often is by profuse hemorrhage during labor, favors coagulation and fibrinous deposition, and strongly predisposes to thrombosis; this is an easily demonstrable and indisputable fact, which is proved also by the common occurrence of another form of local thrombosis with its consequences, phlegmasia dolens, in women who have lost much blood during labor. The anatomical arrangement of the pulmonary artery (its division into numerous small branches, radiating from it at different angles) naturally presents a large surface to the blood, and favors its coagulation. Thrombosis also generally occurs in patients of feeble constitution, debilitated by hemorrhage and other drains, in whom the action of the heart is much weakened. The strongest argument, however, in favor of spontaneous pulmonary thrombosis was pointed out by Playfair in 1867, and is original with him. From a careful analysis of twenty-five cases of sudden death after delivery, in which accurate autopsies were made, Playfair showed that cases of spontaneous thrombosis and true embolism may be divided from each other by a clear line of demarcation, depending on the period after delivery at which the fatal result occurs. In seven out of the twenty-five cases there was distinct evidence of true embolism, and in them death occurred at a remote period after delivery, in none before the nineteenth day. In fifteen cases out of the twenty-five, death occurred before the fourteenth, often on the second or third day, and the post-mortem examination gave no evidence of embolism. The reason of this seems to be that, in the former, time is required to admit of degenerative changes taking place in the deposited fibrine leading to separation of an embolus; while, in the latter, the thrombosis corresponds in time, and to a great extent, no doubt, also in cause, to the original peripheral thrombosis, from which, in the former, the embolus was derived. Another clinical fact, observed in several cases, is the occurrence of peripheral thrombosis, as evidenced by phlegmasia dolens of one limb, shortly *after* distinct signs of pulmonary obstruction which did not prove immediately fatal. A very important question, which has been overlooked by writers on the subject, viz., the possibility of recovery after pulmonary thrombosis or embo-

lism, is answered by Playfair in the affirmative on the strength of four cases, in which all the physical and rational signs of pulmonary obstruction occurred, and still eventual complete recovery took place. The explanation of these cases is, that the obstruction was only partial and allowed sufficient blood to pass to keep the patient alive, until, no sudden unusual supply of oxygenated blood being demanded by any exertion, the obstruction was gradually removed and the patient recovered. The treatment of such not immediately fatal cases consists in the observance of only two rules: 1, to keep the patient alive by the administration of stimulants; and, 2, to enjoin the most absolute and complete repose (strict recumbent posture).

The reason given by the author for the maintenance of the recumbent position during the puerperal state, that sudden sitting up has produced anæmia of the brain and death from syncope—although true—does not, in our opinion, justify him in enforcing this position in every puerperal case. *Sudden* motions should be avoided, *gentle* and *gradual* changes of position can only be beneficial, never injurious.—Some cases of sudden death, simulating pulmonary obstruction or other causes, may, in puerperal women, really depend on the entrance of air through the uterine sinuses. The air globules in these cases (according to Virchow and Oppolzer) become impacted in the lesser divisions of the pulmonary arteries, where they form gaseous emboli and cause death exactly in the same way as when the obstruction depends on a fibrinous embolism.

Phlegmasia Dolens is described by Playfair as a “local manifestation of a general blood dyscrasia depending on the puerperal state,” the nature of which we have already referred to above under Pulmonary Thrombosis.

This tolerably explicit review will, we trust, convey a fair idea of the nature and value of the book. Taking it as a whole, we do not hesitate to say that Dr. Playfair has succeeded well in his task. He has not given us anything particularly new, nor is his treatment of the various subjects essentially different from that generally adopted, but he has been happy in producing the pleasantest and most readable, and withal, for its size, most instructive text-book on Obstetrics of recent years. Its readability is no doubt enhanced by the manner in which the English publishers have gotten up the book—thick paper, clear type, a broad margin occupied at intervals by a synopsis of the text, excellent woodcuts. We are surprised, however, to find in a work, evidently so carefully equipped, numerous typographical errors, principally in foreign proper names (Bandelocque, Academic, F. erichs,

Cruveilhier, d'Espinne, Arch. of Genk, Casuistics des Embolie), which do no credit to the proof-reader.

The AMERICAN EDITION, as far as the reading-matter is concerned, is in every respect identical with the English; the marginal synopsis is omitted. As regards convenience, portability, and probably cheapness, it undoubtedly surpasses the original.

P. F. M.

A MANUAL OF MIDWIFERY. By ALFRED MEADOWS, M.D., LOND., F.R.C.P., &c. Second American, from the Third London Edition, Revised and Enlarged. With 145 Illustrations. Philadelphia: Lindsay & Blakiston. 1876. Pp. 490.

WE have devoted so much space to the foregoing work, that we are bliged to condense our notice of the present book to a few remarks. It may seem partial, but we frankly confess our preference for Playfair. There is, of course, much information scattered throughout Meadows which is not contained in Playfair; how could it be otherwise in two works of nearly equal size written on the same subject by contemporaneous authors? But the treatment of the various subjects is, to our mind, much more clear and comprehensible in Playfair, and nowhere do we find that Meadows has done fuller justice to the topic than the former. Omissions, such as the trephine and Vienna cranioclast, occur in Meadows also; cephalotripsy, to which the latter devotes a chapter of seven pages, is quite as fully discussed by Playfair in the chapter on craniotomy. In short, while Meadows doubtless is a very fair text-book for students, and would have done very well for practitioners until recently, we fear it will not bear comparison with Playfair.

P. F. M.

THE REVIEWS AND NOTICES of other BOOKS RECEIVED have, to our regret, again been crowded out of this Number. They will all appear in April.

COMMUNICATIONS HAVE BEEN RECEIVED from DRs. L. G. W. LIMPERT, N. Y., on "Clinical Observations in Uterine Electro-Therapeutics;" WM. M. CHAMBERLAIN, N. Y., on "Certain Inflammatory Affections complicating the Puerperal State;" E. H. TRENHOLME, Montreal, on "A Case of Extirpation of the Uterus together with its Appendages, for Fibroid Tumor;" S. C. BUSEY, Washington, on "Congenital Occlusion and Dilatation of Lymph Channels" (continuation).

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ORIGINAL COMMUNICATIONS.

THE RELATION OF THE URINARY ORGANS TO PUERPERAL
DISEASES.

BY

W. M. CHAMBERLAIN, A.M., M.D.,

Fellow of N. Y. Obst. Soc., and Physician to Charity Hospital, etc., etc.

MODERN Renal Pathology may be said to date from the year 1827, when Dr. Richard Bright began to publish his now famous observations and his elegant plates. For several years he was his own commentator, working mostly alone. But in 1839 Christison in Edinburgh and Rayer in Paris published their important treatises confirming and extending the observations of Bright, and directed the attention of students to this interesting field.

From 1840-1850 Kölliker, Rokitansky, Bowman, and Simon elaborated the histology of the kidney; Becquerel, Geo. Johnson, Bence Jones, Berzelius, and Beale the chemistry and micrography of the urine.

From 1850-1860 Frerichs, Virchow, Todd, and Traube classified renal diseases according to the tissues and functions implicated; studied the relations of the liver and the heart to the urinary organs, and formulated theories of albuminuria from retarded circulation; uræmia from restrained excretion;

ammonæmia from chemical conversion, and eclampsia from hydræmia. In the following decade, from 1860–1870, these theories were made the occasion of many experiments on the human subject and upon animals by Hammond, Harley, Oppler, Parkes, Richardson, Schottin, Treitz, and Zalesky, and many others. An immense amount of careful and well-distributed work was done, which recently has been collated, sifted, and condensed in the works of Rosenstein, Roberts, and Grainger Stewart.

Early in the course of these studies, obstetricians recognized their important bearing upon the convulsive diseases of pregnancy.

The general similarity between puerperal convulsions and those of Bright's disease had been already noticed by Simpson and Rayer, when Lever, of Guy's Hospital, from 1843 to 1847, published a series of cases in which eclampsia and albuminuria were associated. Shortly after followed the observations of Litzman in Germany and Blot in France, agreeing in the statement that twenty per cent. of all pregnant women, and a still larger proportion of primiparæ, showed albuminuria. In 1855, Braun of Vienna made the formal statement that "Eclampsia of parturient women is commonly the result of uræmic intoxication, arising from Bright's disease."

Objections to this statement have been made by many observers; notably by Prof. Barker in papers read to the New York Academy of Medicine, and in his work on Puerperal Diseases, and by Dr. Braxton Hicks of London.

They show that (1) Puerperal convulsions, in many cases, resemble those of reflex irritation quite as much as they do those of Bright's disease; (2) that pregnant women suffering from well-marked Bright's, sometimes go through child-bed without eclampsia; (3) that some women dead of eclampsia, have shown in life no symptoms, and in death no lesions of Bright's disease; (4) that in others the evidences of Bright's follow rather than precede eclampsia.

Hence, these authors, while not excluding the theory of uræmia, incline to that of cerebro-spinal nervous irritation as the most common proximate cause of puerperal convulsions. And they find clinical support for this position in the accepted value of chloroform, chloral, and morphia in these conditions.

It is not the purpose of this paper to consider specially the subject of puerperal convulsions, but we may note in passing these objections, that the absence of convulsions does not speak for the absence of Bright's disease, since, according to Grainger Stewart,¹ three out of four of all cases of positive Bright's also escape convulsions. Neither do the beneficial effects of morphine indicate that Bright's disease may not be present, since, according to Prof. Loomis,² morphine is of special use in the convulsions of Bright's. The observation of Braxton Hicks,³ that uræmia sometimes succeeds rather than precedes eclampsia does not show that the eclampsia is the cause of the uræmia, since it will, we think, appear that various puerperal conditions, not attended with eclampsia, tend to end in uræmia. It is necessary, to the full solution of these questions, (1) that the exact pathological value of albumen in the urine should be determined; (2) that it should be eliminated from consideration when it depends upon extra-renal sources, *sc.*, cystitis, vesical catarrh, hemorrhage, etc.; (3) that the equation between the extrication of albumen and the retention of urea should be fixed; (4) that it should be known whether the liver or the kidneys are most concerned in the production of urea; and (5) whether urea, or some of its derivatives, as carbonate of ammonia, is the real toxic agent.

The observations of Litzman, as to the frequency of albuminuria in pregnancy, were quoted without being accepted, since Abeille,⁴ who followed him, reduced the proportion from 20 to 10 per cent., and Elliott and Van Arsdale⁵ to 5 per cent. My own observations agree with the latter estimate.

While treating thus fully of the relation borne by the kidneys to eclampsia, authors upon puerperal diseases have not so much considered other modes of morbid action in the urinary organs or so fully developed the circumstances under which they arise, and the influence which they exert. Winkel and Joulin, the later representatives of the French and German Schools, hardly discuss the subject. Dr. Barnes has an interest-

¹ Bright's Diseases, p. 106, Am. Ed.

² Med. Record, Vol. 7. p. 160.

³ Transactions Lond. Obst. Soc., Vol. xii.

⁴ Traité des Maladies à Urines Albumineuse set Sucrées.

⁵ New York Journal of Medicine, 1856.

ing lecture on Uræmic Excretory Fever, and Dr. Barker frequent casual allusions.

On p. 73 he says: "Clinical evidence has amply demonstrated that convulsions, the various phlegmasiæ incident to the puerperal state, the pyæmic diathesis, septic absorption, and puerperal fever, or any of these causes, may develop an albuminuria not previously existing, and lead to that aggregate of diseases of which albuminous urine is one symptom."

This compact statement might serve as the text for nearly all that I shall have to say this evening, and leads us to regret that the circumstances of publication excluded from a work, so replete in clinical interest, the chapters upon the thoracic, renal, and vesical conditions of child-bed, which, as we understand, had been partially prepared for it.

Hervieux,¹ in his great work published in 1870, has very carefully and fully discussed puerperal nephritis, both inflammatory and metastatic, and puerperal cystitis, but appears to attach little practical importance to them, since he declares them "incapable of diagnosis during life, and minor facts in the great category of puerperal poisoning."

In periodical literature, I have found in the third volume of the *Archiv für Gynækologie*, an article by Dr. Kaltenbach, of Freyburg, and in the second volume of the *Transactions of the Berlin Obstetrical Society*, a brief paper by Olshansen, of Halle, to which I am indebted for suggestions, and from which I may cite cases.

My own attention was drawn to this subject by a case in private practice in 1873, and within the last two years, in my service at Charity Hospital, I have seen some cases whose clinical history and necroscopy have enforced the idea *that the urinary tract in its whole length is especially liable to share in any and every morbid process which may follow child-birth, and that the diseases of the urinary tract thus excited have a very marked influence upon the issues of the puerperal state, and sometimes assume the leading rôle among the causes of death.*

It was not until the preparation of this paper was far advanced that I saw for the first time that in two of his Lec-

¹ *Traité Clinique et pratique des Maladies puerperales.*

tures upon Puerperal Fever, Dr. Barnes had followed much the same line of thought that I had proposed to myself, and that some matters and forms of statement, which I had supposed somewhat original to myself, had been more fully traversed and better rendered by others.

The compound word, genito-urinary, designed to indicate the intimate association of two sets of organs and functions, is commonly used in reference to the male. But it is even more appropriate in the case of the female, since, morphologically,¹ the vagina and the bladder are both diverticula from the same pouch of the allantois, and the uterus and the ovaries are in much closer contiguity to the ureters and the kidneys than are the testes and the seminal vesicles, which are the corresponding organs of the male.

The proper sexual organs of the male are all extra-abdominal, while those of the female are, for the most part, intra-abdominal, and by a common peritoneal covering, and a common web of connective-tissue, are brought into closer relation to the urinary organs than in the case of the male.

I am not aware that in the male there has been described anything analogous to the nerves connecting the uterus and the kidney, which Frankenhäuser, of Jena, has demonstrated and figured, and which may be supposed to be concerned in the phenomena of hysteric urine almost, if not quite, peculiar to the female.

Now, if in the male and the non-pregnant female diseases and lesions of the superficial genital organs may conduct, either by the continuous mucous surface of their interior, or by the outer investment of connective-tissue, to acute, rapid, and fatal disease of the kidney, we can well understand how the contusions and lacerations, *inevitable in the parturient process*, may more readily and frequently lead to acute disease of the kidney in the system of the puerperal woman, increasingly predisposed, as it is, through the whole term of pregnancy to such a result.

Three such cases I shall cite. The two first are from a report of Sir Charles Murchison to the Clinical Society of London, in Nov., 1875.

¹ Schroeder, Diseases of Female Sexual Organs, p. 568.

CASE I.—A grocer's clerk, aged 28, who had been regularly at his work up to the day before admission to the hospital, and was not known to be ailing in any other way than from a gonorrhœa, which had existed for some time, was received into the wards in a state of profound coma, varied by muttering delirium. There was no eruption on the skin—no sign of thoracic or visceral disease. He died in a few hours. Except some congestion of the base of both lungs and a few small patches of incipient pneumonia, there were no lesions except in the urinary organs.

The entire length of the urinary tract, from the meatus urinarius to the pelves of both kidneys, showed a mucous surface deeply injected and covered with pus. Both ureters, and both renal pelves were filled with pus. Both kidneys were much enlarged, of very dark color, surface smooth and soft. Dark blood dripped from the surface of the section.

CASE II.—A woman of 25, domestic servant, had apparently been quite well on the day previous to her admission. She had made the trip from Paris to London in company with the cook of the same family, and had eaten a fair supper on arrival. Had been somewhat restless during the night; in the morning had a convulsive fit, followed by profound unconsciousness, and was taken to the hospital, where she died on the third day, the symptoms continuing. Post-mortem examination showed the viscera of cranium, thorax, and abdomen in state of moderate hyperæmia; but no structural lesion, except in urinary organs. Both kidneys were in the early stage of acute nephritis, large, smooth, and black from intense congestion. Bladder, ureters, and pelves contained abundant pus. Lining membrane of vagina, urethra, bladder, ureters, and pelves, intensely red.

CASE III.—(From Kaltenbach.) A woman of 35 was operated (colporrhaphy) for prolapse of anterior and posterior vaginal wall. Before operation urine was normal and no bladder symptoms were present. After operation temporary retention, single introduction of entirely new catheter; moderate or partial suppression; the third day after the operation, smarting and burning in urination, increasing pain in bladder, vesical tenesmus after urination. Hypodermic injection of morphine, followed by relief of bladder symptoms, but then followed a dragging pain in the left groin, extending by the seventh day to the neighborhood of the kidney, which was extremely sensitive to pressure. The next day the pain was somewhat less, but the urine was cloudy and acid; specific gravity, 1020, precipitating flocculi of albumen; under the microscope, pus, epithelium of bladder in cohering flakes; small obovate cells, probably from the ureters; in larger quantity elongated and spindle-shaped shrunken cells from the pelvis of the kidney. The patient gradually recovered.

In the two first cases we have acute erysipelatous inflammation travelling rapidly upward along the inner surface of the urinary passages to the kidney, setting up acute nephritis, marked by acute uræmia, producing coma and death, solely as

a consequence of the kidney disease. In the third case we have traumatic inflammation exciting at first moderate cystitis, which was subdued, then travelling along the external surface of the urinary passages to the capsule of the kidney, as shown by the great sensitiveness to pressure, thence through the cortical to the tubular portion, as shown by the late appearance of the urinary disturbance and the proportions of different epithelia.

The *predisposition* of the parturient woman just stated, consists in that circle of changes by which she departs from the non-pregnant state and returns to it in a period occupying about eleven months.

In the following brief statement I shall sometimes use the statements of Dr. Barnes and sometimes those which were prepared before I had seen his language on the same subject. First are to be noted the changes in the blood.

"These probably begin very early. Convulsions with albuminuria have been seen as early as the fifth month, before the uterus is large enough to exert any material pressure. The circulating fluid, the circulatory and the excretory apparatus, have a double work to do. They must suffice for two organisms. The blood must nourish both; it must purify itself of the degraded materials resulting from the molecular changes going on in both.

For two reasons the rapidity of the circulation is increased. First, the quality of the blood being lowered, it must be sent round more quickly in order to compensate for its lesser value. Secondly, there is the increased demand caused by the new organism. There is every reason to suppose that so powerful a local action cannot go on without affecting the chemical properties as well as the volume and the circulation of the blood. The pulse is quickened; the heart has to labor harder to maintain this increased rate of circulation.

There is a physiological hypertrophy of the heart in pregnancy, analogous to the physiological hypertrophy of the gravid womb." (Larcher, Guillot, and others.)

There are two other causes for hypertrophy of the heart; namely, the increased difficulty of circulating an impoverished fluid, which we see illustrated in the palpitations and cardiac tumult of so-called anæmia; and the increased power required

on account of mechanical obstruction from intra-abdominal pressure. These two causes equally, though not in precisely the same form, subsist in chronic Bright's disease, and serve to constitute a more or less remote parallel between the two conditions.

Andral and Gavarret, quoted by Leishman (*System of Midwifery*, p. 221), state that at term the fibrine of the blood is increased by sixty-two per cent. of its normal amount, the water and phosphorized fat to an undetermined extent. The white corpuscles are also largely increased, while the red corpuscles are diminished about nine per cent., and the albumen to a variable and undetermined extent.

Thus the maternal blood is in a condition of imperfect oxidation. How this may occur, we can see when we consider that, in the first place, the mother's respiratory capacity is decreased by the encroachment of the abdomen on the thorax; and, in the second, that, in the comparative quiet and seclusion which the civilized woman observes in the later months of gestation, the respiratory process is not quickened by exercise; and the air respired, being in-door air, is itself in a condition of suboxygenation. At the same time the red corpuscles give up oxygen in the placenta to supply the aeration of the foetal blood. Thus, by diminished receipt and increased expenditure, the quota of oxygen is drawn down.

Here also the measure of divergence from the normal state is to be found in the sum of the opposite departures. Thus, if there be an equation between the red and the white corpuscles in the normal state, the inequality of the disturbed state is found by adding together the deficiency of the red and the excess of the white; and the vitality of any particular quantum of the blood will be further lowered by the addition of several equivalents of water. The red corpuscles, or their hæmoglobin, are the only carriers of oxygen, which is the factor of normal metamorphosis by combustion; and in the insufficient supply of it the carbonaceous elements in circulation and in tissue are prone to that rearrangement which we call fatty degeneration, for fat is one form of hydrocarbon.

It is understood that in all zymotic processes there is an indefinite multiplication of parasitic life in all the tissues. And it is the opinion of some that the mischief of the microphytes

or mycrozymes consists in the energy with which these evolving forms, in their nascent stage, abstract oxygen from the weakening vitality of the organism which harbors them.

Have we here a solution of the rapidity with which fatty metamorphosis invades the organs of the parturient woman? It will be seen that the changes of the kidney, of which we are about to speak, fall in this line.

Furthermore, as all retrogressive changes end in solution, so they begin in infiltration¹—a condition to which the plethora and hydraemia above noted alike conduce. The attenuated quality and the increased quantity alike favor capillary transudation. Again, the increased amount of fibrin not only favors coagulation in the transuded fluid, but within the vessels large and small.

Thus these three states of hyperinosis, hydraemia and oligo-erythrohaemia, or deficiency of hæmoglobin, condition a cloud of accidents more or less imminent over the parturient woman.

These are: heart clot; capillary infarction; subserous hæmorrhages; general œdema; specially cerebral œdema, embarrassing the nutrition of the brain by compression of intracranial vessels; and infiltration of those complex excretory organs, the liver and the kidneys.

This hepatic and renal œdema further increases the tendency to fatty metamorphosis, not only by solution, but by extrusion of blood from compression, as in the brain.

It is not in place now to notice how all these blood changes have for a final cause the development of the ovum, nor to remark how seldom the cloud breaks in a rain of accidents. More pertinent is it to note how closely these conditions correspond with those of Bright's disease, and how, in the exceptional puerperal cases, they conduce, as they do in Bright's disease, to headache, anæsthesia, eclampsia, pericarditis, pleurisy, and pneumonia.

If, now, to these causes of disease we add another in the shape of direct pressure from the distended uterus upon the emulgent veins of the kidney, we have the cumulative effect on the circulation of the organ in venous hyperæmia of the Malpighian tufts, capillary distention and stasis, effusion of liquor sanguinis and fibrine into the inter-tubular structure, and into the

¹ Rindfleisch, *Pathological Histology*, §§ 7-16, *passim*.

tubules themselves, forming within them a fibrinous coagulum, a hyaline cast. Upon its surface the loosened epithelium, detached by a still continuous transudation, may cohere, making it an epithelial cast. If it be awhile retarded in its progress through the convoluted tubule, the devitalized and sodden epithelium breaks up into its germinal granular matter, and we have a granular cast. If it be still longer delayed, the retrograde process in the epithelium goes still further, and the granular matter is resolved into fat globules, giving us a fatty cast. If upon this train, so prepared, there fall a spark of peripheric irritation, of septic or specific poison, we have a fulminant eclampsia or icterus. Otherwise, nature attempts her own relief by setting up premature delivery, and, subsequent to delivery, unloads infarcted liver, kidneys, and intestinal glands by an excretory uræmic fever. Such a case I have fully reported in the sixth volume of the *Medical Record*, p. 265, and will here add other illustrations:

CASE IV.*—Mrs. H., aged 35, was admitted to hospital in the sixth month of her fifth pregnancy, moribund. Was in good health until a fortnight before admission. Thence symptoms developed as follows: Mental depression, gastric oppression, vomiting, progressive jaundice, constipation, hæmatemesis, stupor alternating with violent delirium, premature delivery of twins, coma, death. Autopsy thirty-one hours after. Skin and viscera icterized. Lungs moderately congested and cedematous. Many small ecchymoses beneath pericardium, and capsules of liver and spleen, and through the substance of liver, which was very much reduced in size. On scraping the surface of section a large amount of fatty matter remained on the knife. The cells on the periphery of the lobules were almost completely broken down; towards the interior were enlarged, filled, some with oil globules, some with fatty matter. Kidneys: A very copious exudation occupied the uriniferous tubules, and the epithelium was affected in the same way, as were some of the cells of the liver, *i. e.*, some of the cells were swelled, dense, opaque, granular; some extremely fatty; some had broken down and disappeared.

CASE V.—Mrs. M., æt. 22, near the end of first pregnancy; was always in good health. Became suddenly ill on the 20th of October, with symptoms at first referred to the uterus. Admitted to hospital on the evening of the 22d, premature labor on the morning of the 24th; death on the same evening; illness three and one-half days. At the autopsy: Uterus appendages and peritoneum were found to be all normal for the parturient state, and no morbid anatomy was found anywhere except in the liver and kidneys. In the latter the tubules

* From Grainger Stewart on Bright's Diseases.

were distended, opaque, gorged; their epithelial cells full of granular matter and fatty matter, very easily breaking down; the pressure of a light-covering glass sufficing to reduce the tube casts to a fine débris. The stroma also contained numerous fatty granules, arranged in tubes and lines, as if situated in the connective-tissue corpuscles. Similar changes in the liver were less advanced.

CASE VI. (Abridged from report by Dr. Oppenheimer, of Charity Hospital.)—Ellen O'Brien, æt. 29. Delivered December 23d, after natural labor of nine hours. Uterus contracted well. Immediately after delivery lost control over sphincters—an almost continuous flow from the urethra and anus. Urine acid, sp. gr. 1016, abundantly laden with pus, casts and epithelium from bladder, pelves and tubules. Urine after filtration showed one-fourth albumen. Temperature $103\frac{1}{2}$ on the second day, thenceforward $99-101\frac{1}{2}$; in articulo, 102. Diarrhœa incontrollable; tongue moist and slightly furred. Abdomen never tympanitic or painful; lochia normal. Conscious and uncomplaining until three days before death, when she became stupid. Pulse and heart action very feeble. Death, from heart failure, seventeen days after delivery.

By autopsy.—Viscera of thorax all normal; uterus, appendages, vagina, cervix, and peritoneum normal.

Liver large, flabby, pale yellow; section showed several infarcti in yellow stage.

Kidneys large, soft capsule loosened; both pelves showed pyelitis—most marked in right, parenchymatous nephritis; bladder normal; small intestines normal; colon in state of catarrhal inflammation throughout—most marked at the cæcum, where were small superficial ulcerations.

A fourth case speaks for the hyperinosis of the parturient woman.

CASE VII.—Lizzie O'Neill, æt. 32, was delivered December 19, 1875, after a short and easy labor of an hour and a half. All the sequelæ were apparently normal, and she was up and dressed on the sixth day for Christmas. On the morning of the 2d of January she went to the water-closet and returned gasping, cyanotic; expiring in a few moments.

The heart was found to be somewhat fatty. In the first divisions of the left pulmonary artery was an old and partially decolorized clot, overlapped by a soft recent clot two and one-half inches long in the main trunk, in diameter as large as a wooden pencil. The liver was soft and friable, weighing 6 lbs. 7 oz. Kidneys somewhat increased in size, cortex swollen, tubules yellowish. Both pelves and ureters contained puriform fluid; left ureter was dilated, and there was marked cystitis. Uterus and appendages all normal.

I regard these cases as not less interesting by their dissimilarity than by their essential identity.

Four women, so far as known, previously healthy, succumbing to the blood changes of pregnancy, without symptom or lesion of the uterine organs; one by acute fatty metamorphosis (I use this word rather than "degeneration," since the latter would seem to imply a slower process) of the liver, plus a minor grade of the same process in the kidneys; another by acute fatty metamorphosis of the kidney, plus a minor grade of the same process in the liver; a third by recent œdematous infiltration of the kidney and fatty metamorphosis of the same, plus similar œdema and catarrh of the overlying intestine; and the fourth by a morbidly coagulable blood, plus a fatty heart, liver and kidneys. Like the aspect of the old *Parcæ*, "*Facies non una, nec diversa tamen, sed quales decet esse sororum.*"

According to Frerichs and Murchison, more than half of the cases of acute yellow atrophy of the liver occur in women in the later months of pregnancy—almost always inducing miscarriage.

The cases thus far cited were free from every uterine complication; they were in nowise influenced by accidents of the puerperal process, and they therefore show the organic predisposition in the pregnant woman to diseases of the kidney.

This predisposition is farther increased by changes in the tissues corresponding to those in the blood.

The non-pregnant uterus with its appendages weighs perhaps five ounces; the same, containing the matured ovum, not less than fifteen pounds; the same, four weeks later, from seven to ten ounces. To provide for the evolution of the uterus, the extrusion of the ovum and the involution of the uterus, requires a very signal development of the muscular and vascular tissues.

The plates of Cruveilhier and Mascagni demonstrate a mass of venous convolutions enveloping the uterus in such abundance that, when fully injected, they constitute a nearly complete sheath. The same description may apply to the lymphatic vessels in the subserous connective tissue. Clusters of lymphatic ganglia, previously unrecognizable, encircle the cervical zone of the uterus and the inner portion of the Fallopian tubes.

So fully equipped, and so apt for its coming work is the absorbent system that women near term are especially liable to all infectious diseases. Dr. Braxton Hicks, in the 12th volume of the Obstetrical Society's Transactions, publishes 37 cases of

puerperal scarlet fever (27 fatal), commencing either shortly before labor or within five days after, thus showing either extraordinarily shortened incubation or ante-parturient absorption. Also similar observations with regard to diphtheria and erysipelas. Dr. Barnes says it is not uncommon for pregnant women to have a second attack of scarlatina. Dr. Haussmann, whose studies in this direction have for a long time been in high esteem, in the last number of the Berlin Obstetrical Journal says that the vaginal secretions of at least 11 per cent. of women near term show the presence of bacteria.

We may now consider how the process of parturition affects the urinary organs. By this process, in the course of a few hours the woman suffers a loss of substance, and a diversion of the circulation about equal to that involved in the amputation of the thigh at its middle third, often also combined with an equivalent amount of pain and nervous shock, and in addition a degree of muscular effort without a parallel.

The tense contractions of all the abdominal muscles, including the diaphragm, the closed glottis, the compressed but excited heart, and the maximum pressure on the emulgent veins, are all factors in inducing a marked—fortunately, for the most part—a transient congestion of the kidney.

But, at this stage, the lower portion of the urinary organs becomes exposed to great hazard. For days before labor, the low lying head often so flattens the bladder against the pubic arch as to prevent its full evacuation, and the residual urine becoming alkaline, disorganizes the mucous membrane. During labor, the contusion and stretching of the anterior wall of the vagina, determine all grades of accidents from sphacelus to catarrh. Some degree of morbid action from these causes is seen in the majority of cases. A single case may serve as an illustration.

CASE VIII.—A lady, the patient of a medical friend, believed to be at the end of her term, and suffering from pains in the hypogastrium, with frequent micturition, summoned her physician. He found the head low down, the cervix obliterated, the os distensible. For a week he waited on a labor which did not begin. Then, being obliged to leave, he passed the case to me. I saw her first when labor was in progress. It was normal and easy. Eight hours after, I found her suffering from retention with much tenesmus. The urine drawn by catheter contained abundantly epithelium of the bladder

and pus. Acute cystitis was developed, but in a few days yielded to washings of warm salt water and anodynes.

This form of cystitis is very common, usually slight in its symptoms and tending to spontaneous recovery. I believe that I have very often overlooked it; confounding its subjective symptoms with after-pains; its tender hypogastric tumor with a sensitive uterus; its troubled urine with urine contaminated by lochial admixture or vaginal secretions. Rarely is there a vesical paralysis permitting a painless hyperdistention of the bladder, to such an extent that we might suppose meteorism was present, did not the fluctuating tumor, soft but dull on percussion, and the stillicidium urinæ, but especially the catheter, readily conduct us to the true diagnosis.

It is the opinion of the Germans, as stated by Kaltenbach and Olshausen, that bladder-catarrh or cystitis is often caused, where it would not otherwise exist, by the introduction of the catheter. They declare that danger from this source is three-fold: 1st. The irritation caused by forcing a catheter through the swollen urethra. 2d. The carrying of infectious matter, s.e. lochial discharge, vaginal secretion, pus from vaginal laceration, or unclean matter accidentally remaining in the catheter, into the bladder; and 3d, The introduction of air too often charged with parasitic spores.

To guard against these contingencies, which they declare they have occasionally seen to be very mischievous, they have made the rule, in some of their maternity hospitals, that the catheter shall never be introduced under cover; that the orifice of the urethra shall be fully exposed to view, and previously wiped with a lock of cotton wetted in some mild antiseptic solution; and that only an instrument, new or capable of being disinfected by fire, shall be used. For lack of these precautions they declare that a benign catarrh may become or be made an erysipelatous or a diphtheritic cystitis, occupying the entire bladder, ascending the ureters, and invading the kidney with fatal results. The following case, which fell under my own observation, supports, in part, this declaration.

CASE VIII.—M. M., 28 years of age, an habitué of the Island and a hard character, was delivered by me with forceps of her child, weighing eleven and one-half pounds, naked! It was dead, very much de-

composed, the skin of the arms and back being wiped off by the towel used in drying it. The discharge which followed extrication of placenta was foetid, no hemorrhage. The perineum was lacerated nearly to the sphincter, not involving it.

The following day—Pulse 120; temp. $101\frac{1}{2}^{\circ}$ – 103° . Much tympanitis; no tenderness of abdomen; lochia offensive; water drawn and vagina syringed, *ter-in-die*, with carbolic solution.

Second day—Temp. 103° – $103\frac{1}{4}^{\circ}$; pulse 120. Dark slough, forming on the perineal wound. Constant disinfection employed.

Third day, morning—Pulse 94; temp. 101° . Abdomen softer; patient says she is better. Evening, temp. 102° ; pulse 130.

Fourth day—Pulse 126; temp. 101° . Patient is much worse. Abdomen very much distended, but there is no pain in it, and it may be freely manipulated without tenderness. Patient grew rapidly worse, and died exactly four days after delivery.

Autopsy, twelve hours after death.—Abdomen, upper portion, tympanitic; dull on percussion over pubis; perineal wound sloughy, covered with a fetid discharge. Thorax: Recent *pleurisy*, with slight amount of fibrinous exudation in lower third of right lung. Also a patch on the outer surface of left lung, about midway. Underlying this pleuritis was a thin stratum of acute pneumonia, averaging six lines in depth. Remainder of lung somewhat congested, with some muco-pus in bronchi. Heart shows a few small superficial hemorrhages; walls contracted, cavities empty, valves and vessels normal. Abdomen: Cavity of pelvis contained a little thin serous and purulent fluid with flocculi of fibrine. Surface of peritoneum: transparency lost; no adhesions; a *yellowish substance may be scraped from the surface*. Intestines distended with gas; uterus reaches fully to umbilicus. Liver: Much enlarged (5 lbs. 10 ounces), flabby, very friable, deeply congested and oedematous; a moderate amount of old cirrhosis; spleen enlarged, diffident. Kidneys: Much enlarged; one weighing thirteen ounces, the other ten and one-half ounces, or nearly two and one-half times their normal weight; capsule loose and marked with inflammatory mottling. Surface of kidney shows lobulated swellings (Malpighian bodies), sulci depressed and pale yellow (fatty degeneration of intertubular connective tissue); the whole surface shows minute puriform points, scattered miliary hemorrhages, deep redness of the swollen and prominent portions of surface. By section: Tissue soft, cortical substance twice as thick as normal, and, with the pyramids, is the seat of an almost general, acute, suppurative nephritis. The whole mucous membrane of renal pelvis shows intense pyelitis with large patches of hemorrhage in substance of membrane. Ureters: Moderately thickened and dilated; the mucous membrane in the same condition as that of pelvis. Bladder: Its walls hypertrophied, capacity much increased; mucous membrane much thickened, rough, villous, at fundus filled with miliary hemorrhages; prominences of trabeculae covered with diphtheritic membrane. Uterus and appendages: Womb, twelve inches long, eight inches across fundus; walls, three-quarters of an inch thick and flabby; in poste-

rior wall several small subperitoneal fibroids; surface of cavity covered with shaggy coagula, at placental site; and throughout with a thick diphtheritic membrane, which superficially is disorganized and gangrenous, and extends into the substance of the uterine wall and sinuses. The cervix is slightly nicked at the right lip of os. Summits of vaginal rugæ, covered with diphtheritic membrane, still intact and firmly united with structure of mucous membrane. Stomach and intestines were normal. (Maxwell.)

This unfortunate woman, containing a putrid foetus, and therefore septicæmic ante-partum, might have died if all her urinary organs had been sound, but, as I read the autopsy, it seems that the morbid process was farther advanced in the urinary organs than elsewhere, that the thoracic lesions were probably consecutive to the renal trouble, and that death, when it occurred, was determined by the condition of the kidneys. Diphtheritis may have extended to the bladder by contiguity from the anterior wall of the vagina, or it may have been transferred by vaginal secretions adhering to the catheter.

In view of the fact that although the secretions of the diphtheritic fauces are constantly falling through the œsophagus, yet, so far as I know, we rarely have diphtherite of the stomach, it would appear more probable that the extension was by contiguity rather than by transfer.

It will be noted that the diphtherite extended through the entire genital track as far as the oviducts, and through the entire urinary tract as far as the ureters. Beyond these points we have *suppurative* salpingitis and ovaritis; suppurative ureteritis and nephritis. That, in both cases, this was due to the same proximate cause, i.e., swelling of the muscular coat of uterus and bladder, which occluded the distal orifices of these tubes, appears probable from the immense œdema of both kidneys and ovaries, both more than double their normal size, and the dilated ureters and loosened capsule.

At this point the observations of Zalesky become very interesting. He removed the kidneys from a certain number of animals, and in an equal number of the same animals he tied the ureters, at their entrance to the bladder. The latter died promptly from uræmic coma, and from the surface of the peritoneum and pleura he could "*scrape a yellowish substance which proved to be salts of urea*;" an apparently similar deposit was (as above stated) found upon the

peritoneum in this case. On the other hand, the animals, from which the kidneys were removed, lived a much longer time, becoming uræmic very slowly. These experiments having been repeated and confirmed by Oppler, Schottin, and Perls, have been accepted as showing that the urea is not secreted by the kidney from the blood, but formed in the kidney. The observations of Cyon and Meissner show that it is also formed in the liver.

The two cases last cited may be taken respectively for examples, if not types, of inflammation of the mucous and of the muscular coats of the bladder. I have a third observation which I will not cite at length, in which a cellulitis of the right broad ligament, swelling largely, slowly developed albuminuria; cells supposed to represent the ureter being first observed; the hypogastrium then became very sensitive to pressure, and finally vesical epithelium and pus appeared abundantly in the urine. Inferentially, we have in this case, periuteritis, followed by pericystitis striking through all the coats, and becoming a general cystitis, enduring until the cellulitis terminated in recovery.

This matter of the occlusion of the ureters, whether by thickening of the muscularis of the bladder, or by lymphangitic swellings, seems to me of much interest in view of our recent discussion of lacerations of the cervix. By every such laceration, and particularly by such as extend into vaginal tissue, the web of greatly developed lymph spaces and lymph canals is opened, and freer entry of whatever is morbid in vaginal secretions, and of the products of suppuration, is promoted. If now we remember that the cervix is in apposition with the middle portion of the base line of the triangle of Lieutard, connecting the vesical orifices of the two ureters, we can see how readily traumatic swelling, in proportion to its amount, will infringe on the calibre of the ureter.

Having thus considered the conditions subsisting before birth, and the contingencies connected with birth, we may now look at those which arise *after* birth. After the middle of pregnancy the uterus escapes from the true pelvis, and expands under only such moderate pressure as exists in the large cavity of the abdomen. That this expansion sometimes effects a mischievous coarctation of the renal emulgent veins, is on all sides

conceded, but the blood and lymph-moving canals of the uterus itself are in good measure shielded. After birth the conditions are somewhat changed. The uterus descends into the true pelvis as far and as fast as its reduced size will allow. In all the autopsies of women dying in the first week after delivery, the transverse diameter of the fundus is greater than the transverse diameter of the pelvic brim, and the longitudinal diameter is largely in excess of the depth of the true pelvis. Thus the womb remains resting upon the promontory of the sacrum, and the efferent trunks of its blood and lymph vessels occupy the half-enclosed canal between the promontory and the inner border of the psoas muscle (see Hunter's plate). In the condition of tonic contraction, the globo-cylindrical form of the womb will leave this not essentially constricted. But the condition of firm contraction is not persistent, and is interrupted by many physiological causes, and by all morbid processes. When flaccid, the uterus must overlie this canal, and at least, by its weight, oppress the efferent vessels, and the ureters, which lie parallel with them, and in the same web of connective tissue. Thus, the pelvic circulation and miction will be correspondingly impeded. Doubtless, this condition is often very much aggravated by the injudicious employment of compresses and binders, by which, with the purpose of preventing concealed hemorrhage, we crowd the womb hard down on the pelvic brim. Thus, ordinarily, for three days the collapsed rectum cannot deliver the contents of the colon, and the hampered bladder must make partial and unsymmetrical efforts to expel its contents—limited in amount by the coarctation of the ureters. I have repeatedly observed in the reports of autopsies that, accurately at the margin of the brim, the ureter, of normal size below, was upward to the pelvis of the kidney, dilated to twice or three times its normal calibre.

Kaltenbach makes also this observation :

CASE IX.—S. B., twenty years; primipara. Urine, in pregnancy, normal; after delivery, endometritis; diphtheritis of slight lacerations in mucous membrane of vulva, followed by diffuse parametritis and peritonitis; died at the fifteenth day post-partum. In the last three days of life, the urine, which up to that time had been normal, became fetid, turbid; reaction alkaline. It contained albumen in large quantity; and of elementary forms—pus, epithelium of the various passages; various detritus; ammoniaco-magnesian phosphates. Post-

mortem gave extensive peritonitis, diphtheritis of the placental site, patches of diphtheritic membrane as large as a bean upon the mucous membrane; the diphtheritis of external genitals was retiring. In the parametrium, to left of the uterus, cloudy swelling of the connective tissue; the left ureter dilated to double its size; left kidney enlarged; after removal of its capsule, the cortical substance in some places yellow, in some gray, marked by reddened streaks and many superficial hemorrhagic infarctions, also numerous small patches of softening on the periphery, which on section were seen to penetrate like wedges. In the almost normal right kidney only a solitary group of puriform points; mucous membrane of the bladder strongly injected, ecchymosed in several places, and upon it patches of false membrane, which, when removed, showed loss of substance beneath.

Here we have, as a consequence of diphtheritis about the vulva and in the endometrium, the pelvic lymph spaces laid open to the entrance of septic fluid; lymphangitis of the left side causing occlusion of left ureter, which, in turn, produced œdema and rapid fatty metamorphosis of left kidney; the right side remaining exempt.

CASE X.—The same observer also reports a very interesting case in which, after difficult labor from contracted pelvic outlet, perimetritis and peritonitis followed, which, by the tenth day post-partum, had set up a secondary nephritis; the causal phlegmasia then seemed to decline and pass away, but the nephritis continued, and in the fifth week post-partum, the patient died from uræmic coma.

Autopsy showed of the early changes in perimetrium and peritoneum, only a slight swelling in the *right* parametrium remaining; abscesses in both ovaries; both kidneys enlarged; cortical substance thickened and discolored, and in the *right* kidney upon surface and through the substance numerous little abscesses, from the size of a pin's head to that of a pea. This case is clearly to be interpreted as metastatic suppurative nephritis—the fatal out-put of a transient peritonitis and cellulitis.

A case from the Hospital Records, in which, unfortunately, no determination of the quantity and quality of the urine seems to have been made for several days after labor, appears nevertheless very fully to illustrate the same process of uræmia from occluded ureters.

CASE XI.—D. G., 20 years, primipara; labor normal; thirteen hours; living child; sequelæ normal; forty-eight hours after, pulse 82, temperature, 101; twelve hours later, tenderness in hypogastrium and left iliac fossa; variable fever; pulse, 118. Temperature, 104½.

4th day.—Same symptoms; weakness; deafness (in this case the first symptoms of uræmia). Details of urine lacking.

5th day.—Epigastric pain; later, general abdominal pain.

6th day.—Vomiting; weakness; epigastric pain.

7th day.—General abdominal pain; great weakness; excitement.

8th day.—Less pain; great weakness.

9th day.—Less pain; great weakness; bowels regular to date; urine not noted.

10th day.—Less pain; great weakness; urination scanty, albuminous.

11th day.—Became suddenly delirious; comatose; suppression; four ounces of densely albuminous urine in bladder; convulsive twitching.

12th day.—Coma. Death.

Autopsy.—Brain, lungs, heart, liver, spleen, nearly normal. Kidneys large; capsule loose; cortex thickened, swollen. Acute parenchymatous and tubular nephritis. Both pelves dilated. Both ureters dilated; right five times normal size. *Both contain pus (macroscopic), probably tubular epithelium.

Localized peritonitis, agglutinating the fundus of the uterus, a few loops of intestine, the fundus of the bladder, the broad ligaments, and retro-peritoneal connective tissue, and muscular coat of bladder. The interior of bladder and uterus, the cervix and vagina nearly normal.

This patient clearly died of uræmia. By the great weakness, the disturbance of the senses, the constant nausea, delirium, convulsions and coma, the case is distinguished from simple puerperal peritonitis, and from puerperal septicæmia.

This uræmia was consecutive to a localized inflammation, involving fundus of uterus, bladder, etc., and by swelling occluding the ureters. Hence the kidneys became œdematous, and nephritis with suppression followed.

I am entirely of opinion that the converse relation also exists—that is, that the renal disease sometimes stands as the cause of the peritonitis, for I have a recollection of two young primiparous women, seen for the first time when in labor, both very anasarcons, both in convulsions (which continued with decreasing frequency for some days after labor), and both, when apparently convalescent from the uræmia, developing an unexpected peritonitis.

Compare the facts that peritonitis rather often arises in the course of Bright's disease, and the observation of Zalesky, before quoted, that after tying the ureters, the salts of urea accumulate on the surface of the peritoneum.

I have thus presented cases of simple erysipelatous, diphtheritic, lymphangitic, pyæmic, metastatic cystitis and nephritis.

It may be thought that from a wide search, only such as suited my present purpose have been collated. Such is not the case. I have carefully reviewed the history of obstetrics in Charity Hospital *for several years*, and endeavored to trace the autopsies of women who died within six weeks after delivery, *with an increasing conviction that the urinary organs in fatal puerperal cases are almost uniformly diseased, and in many cases much more significantly than the uterine organs.*

The autopsies of the Hospital are made by the curators appointed for that purpose, and the custom is to summarize the leading facts in the caption or heading of the record. Many of these records in recent years have been made by Dr. Maxwell, whose pathological attainments and discriminate modes of statement are highly appreciated by all who know him. From these records I have obtained a series of cases standing nearly consecutive in the autopsies of puerperal women. These headings of cases, with occasionally a word of explanation from the text, read—

CASE I.—Pelvic abscess; acute endometritis; acute suppurative nephritis; thrombosis of uterine veins.

CASE II.—Diphtheritic endometritis; dilated ureters and pelves; pyelitis; acute interstitial suppurative nephritis; cystitis.

CASE III.—Puerperal septicæmia; advanced parenchymatous degeneration of kidneys.

CASE IV.—Uræmia seventh month of pregnancy; parenchymatous degeneration of kidneys.

CASE V.—Puerperal convulsions; parenchymatous nephritis.

CASE VI.—Diphtheritic cystitis, endometritis; ureteritis and pyelitis; acute suppurative interstitial nephritis; pleuritis; and pleurogenous pneumonia.

CASE VII.—Puerperal metritis; gangrene of cervix; kidneys enlarged, pale, fatty.

CASE VIII.—Pelvic cellulitis and peritonitis; kidneys normal size, generally congested; pelves and ureters somewhat dilated.

CASE IX.—Puerperal pyelo-nephritis; lobular pneumonia; kidneys slightly enlarged; capsule easily stripped over the surface of each; several swollen prominences dotted with yellow points; acute interstitial nephritis; ureters above pelvic brim distended to $2\frac{1}{2}$ times normal size, and are the seat of intense

ureteritis. The tissues surrounding them are œdematous; uterus, ovaries and appendages normal.

CASE X.—Pyelo-nephritis, ureteritis and cystitis; dilated pelvis and ureters; cysts of ovary.

CASE XI.—Diphtheritic endometritis; pelvic abscess; hemorrhagic cystitis and pyelitis; suppurative interstitial nephritis of left kidney; acute parenchymatous nephritis of right kidney; entero-colitis; emboli infarcti of spleen and left kidney.

CASE XII.—Puerperal peritonitis; double circumscribed pleuritis. This patient died in uræmic coma, convulsions continuing after delivery; suppression of urine; symptoms of peritonitis developing twenty-four hours before death; no abnormal appearances in any portion of the urinary organs recognized at autopsy.

CASE XIII.—Double pleuritis; double hypostatic pneumonia; perimetritis; localized diphtheritic puerperal endometritis; diphtheritic cystitis; dilated pelvis and ureter of right kidney.

CASE XIV.—Puerperal peritonitis; acute interstitial nephritis; diphtheritic cystitis, ureteritis and pyelitis; double pleuritis.

CASE XV.—Puerperal peritonitis; double pleuritis; parenchymatous degeneration of kidneys; pyelitis; ureters markedly dilated, that of the right side about seven times the normal size.

CASE XVI.—Puerperal endometritis; slight lobular pneumonia; suppurative interstitial nephritis.

CASE XVII.—Puerperal metritis; abscesses in uterine wall; peritonitis; cystitis; hemorrhagic pyelitis; localized acute interstitial nephritis; suppurative arthritis of knee-joint; pyæmia.

CASE XVIII.—Acute parenchymatous nephritis; cystitis; cervical endometritis, puerperal.

CASE XIX.—Localized pelvic peritonitis; pelvic abscess; parenchymatous nephritis.

CASE XX.—Thrombosis and embolism of left pulmonary artery.

CASE XXI.—Puerperal peritonitis; acute interstitial nephritis.

Of these twenty-one cases, *nineteen* showed distinct morbid process in the kidneys, *eight* showed distinct morbid process in the bladder, *eleven* showed distinct morbid process in the interior of uterus. In *nine*, who had distinct lesions of the kidneys, *no distinct* lesion of the uterus was recorded. In *all* who had distinct lesions of the uterus, distinct lesions of the

kidneys were also recorded. Wherever there was diphtheritic inflammation of the bladder or intense lymphangitis there was dilatation of the ureters. The average age of the patients was between twenty-three and twenty-four, and therefore the presumption of Bright's disease preceding pregnancy was small.

During my last term of service, which continued for six months, and comprised about 275 deliveries, I made a diagnosis of greater or less kidney disease in thirteen cases which terminated in recovery. The diagnosis was based upon pain in the lumbar region, increased by pressure, accompanied by pus, epithelium or casts in the urine. In most of these cases there was also a degree of cystitis, sometimes apparently consecutive to the nephritis, descending along the ureters to the bladder, and sometimes primary and followed by nephritis ascendens.

Finally, I venture to formulate the following conclusions:

1. Acute erysipelatous inflammation of the external genitals may ascend to the kidney, sometimes by the inner and sometimes by the outer surface of the urinary tract.

2. The blood of the parturient woman, saturated with fibrine and poor in hæmoglobin, predisposes her to disease of the excretory organs—the kidneys and liver. With a sufficient exciting cause acute fatty metamorphosis takes place. Fatal cases only are demonstrable, but minor grades of the process are probably not unfrequent.

3. Lymphangitis limited (cellulitis), and lymphangitis diffuse may mechanically induce acute œdema of the kidney in the puerperal woman by obstruction of the ureter.

Diphtheritic or other inflammation involving the muscular coat of the bladder produces the same result.

However excited, œdema of the kidney tends to rapid degeneration both of the tubular and inter-tubular structure.

4. Diffuse lymphangitis, commonly attending septic processes, by rapid destruction of the hæmoglobin, tends to the same result, while ulcerative endometritis, suppurative metrophlebitis and cellulitis, tending to pyæmia, not unfrequently are productive of metastatic suppurative nephritis.

5. The condition known as nræmia tends to develop peritonitis in parturient women.

Should the profession confirm and extend these observations,

important inferences as to prognosis, and as to the hygiene of the pregnant, and the management of the parturient woman, may follow from them.

68 W. 40TH STREET, FEB. 20TH, 1877.

[With the consent of the various parties concerned, we append the following remarks, made after the reading of the paper :

The President called upon DR. FORDYCE BARKER, who spoke as follows :

Mr. President and Gentlemen:—I have listened with interest to the paper read by Dr. Chamberlain, and regard it as one characterized by a most thorough and careful research, and also by a very close and extensive observation. I do not propose, in any sense of the word, to criticize the paper; that would be impossible, from merely listening to it, and indeed, I should not wish to, because it states in a full and clear manner most important facts, which should be borne in mind, and in most respects I should agree with the author in his pathological views.

There are, however, some deductions not mentioned in the paper, and it is to those that I shall chiefly allude. In the first place, I will briefly refer to the fact that all these various lesions of the kidneys and liver, to which especial attention has been drawn, are found associated mainly with puerperal diseases, when they exist in an epidemic or endemic form. The tendency of a certain class of observers and writers has been invariably to give prominence and significant importance to local lesions, to regard such manifestations as purely local diseases. For instance, as we all know, in former times, able writers have endeavored to explain puerperal fever by referring it to a purely local inflammation. Now, I am aware that I stand in a very small minority in the professional world, a minority much larger than it was a few years ago, who hold to the view that puerperal fever is an essential, constitutional disease, having its peculiar local manifestations in different types in different epidemics and in different localities; that it is a specific disease, properly speaking, without special characteristic, anatomical lesions. I am well aware that we find in epidemic and endemic puerperal fever, lesions of the kidneys and liver, varying in severity from a mere hyperæmia to extreme inflammation, with its terminal results. I simply wish to call attention, in connection with this point, to this fact, that these various lesions are generally associated with the epidemic and endemic forms of puerperal fever, as I consider it. It is not my intention, however, to discuss the subject of puerperal fever, but simply throw out these suggestions because I feel that the deductions might remain, that such special lesions of the liver and kidney are purely local forms of disease, and are to be studied as such.

I will add, by way of supplement to the paper, not in the light of a criticism, but to make our discussion broader, what my own clinical experience may contribute to the knowledge already obtained upon

the general subject, and I do this simply because it is well to take in the entire scope of the subject, involved in the announcement of the paper.

I will allude to one practical point suggested in the paper, and I mention it because I believe that nothing should be accepted as authority unless it can be demonstrated. The author of the paper referred to Olshausen and other German writers, who object to the use of the catheter for certain reasons which he mentioned. I refer to this because I believe that the catheter is not too frequently used in puerperal cases, but because my experience would lead me to the conclusion that the use of the catheter is too often neglected. I very rarely see cases in which the catheter has produced harm, but I frequently see cases in which its neglect has resulted most hazardously. Not long since I saw for the first time a case of secondary hemorrhage, caused by a distended bladder. The attending physician had been deceived by the statement of both the patient and the nurse that the urine had been frequently evacuated, and he regarded the tumor over the pubis, which was very distinct, to be the large uterus. But on palpating the abdomen, I found the tumor to be more smooth on its surface, more regularly ovoid in its form, and that it was characterized by a more fluctuating kind of elasticity than should belong to the uterus, and I therefore suspected it to be due to a distended bladder. The patient at this time was in a condition of collapse from hemorrhage, which occurred fifty-two hours after labor was completed. A catheter was introduced, and nearly two quarts of urine was drawn off.

The results which follow retention of the urine in puerperal cases, I have repeatedly seen, and one of these is an incomplete evacuation of the bladder, and the effects on the general system of residual urine.

I take this occasion to give a description, which I know to be clinically true, of a condition which I regard as practically important, but which I have been as yet unable to find mentioned in any obstetrical work. It is not unfrequently the case that a woman after her confinement suffers from retention of urine, or, at least, difficulty in evacuating the bladder. This may arise from long pressure upon the urethra, or some portion of the bladder, during the processes of parturition, or from long retention of urine and paralysis or paresis of the urethra or bladder. Subsequently the bladder gets relief to a great extent, but not completely.

Now there is an affection which I am sure results from this condition of affairs, and which has well-marked and characteristic phenomena that I will describe, and which I feel certain many who have been long in the practice of medicine have met. I am certain that the affection exists, and the process by which I reached this conclusion is something as follows:

The first case, in which the symptoms which I am to detail were developed, was that of a woman who had relaxation of the symphysis pubis to such an extent that she fell upon the carpet and was unable to walk afterwards. She was subsequently confined, and had a per-

fectly natural and quick labor. She was unable to walk for a long time after her confinement. For three or four weeks she did well, as regards her general condition, but there had been more or less trouble in passing water, and she began to develop symptoms which were like those seen in the case of a gentleman whom I was attending at the same time. He was paraplegic during a certain period in the progress of his case, which I now know to have been one of locomotor ataxy—a disease which had at that time not been described. He suffered from painful and frequent micturition and the following constitutional symptoms. There were great gastric irritability, nausea, vomiting, and loss of appetite, loaded tongue, general muscular weakness, and great mental depression. Subsequently the man had complete paralysis of the bladder and I was compelled to use the catheter. From the time I began its use there was a rapid subsidence of all these symptoms mentioned. His general condition improved, his appetite was restored, and his countenance looked quite healthy, and the frequent urgent desire to micturate subsided. About five or six weeks after my patient with relaxed symphysis pubis was confined, she began to manifest similar symptoms and suffered from an almost incessant desire to empty her bladder. Finally, a catheter was introduced, just after she had passed all the water she could, and nearly two ounces of exceedingly fetid urine were withdrawn. That quantity had remained in the bladder after the most complete effort to empty it. The thought at once struck me that it was the decomposition of the urine remaining in the bladder that gave rise to the constitutional symptoms from which my patient was suffering. From that time forward I used the catheter three times every twenty-four hours, and with the most striking and rapid improvement. These cases occurred in my practice more than thirty years ago, and since that time I have seen a considerable number of like cases, although rarely developed, to such a high degree as the two just mentioned. They have, however, manifested the same general constitutional disturbance, and presented the same phenomena. I have often been called in consultation at the expiration of three or four weeks after delivery, and found the condition I have just described.

The patient has gone on very well for three or four weeks, sometimes longer, after her confinement, when it is noticed that she begins to lose her appetite, to complain of nausea, and sometimes vomit, there is increasing muscular weakness, a sunken, haggard countenance, a coated tongue, offensive breath, and great mental depression, accompanied by vesical tenesmus, and a frequent, most troublesome desire to evacuate the bladder. When I have suggested that these symptoms might be due to residual urine in the bladder, it has been objected that she is too frequently called upon to pass water.

Insisting, however, that there might be a residual amount of urine in the bladder, the patient has been directed to void all that she possibly could, and then the catheter has been introduced with the result of drawing off a certain quantity of exceedingly offensive water. The catheter is then used every six or eight hours, and the patients have

been relieved of the constant vesical irritation and the attendant symptoms. Other treatment has been employed, according to the requirements of each case, but no radical measures have been employed, except the use of the catheter.

(Several illustrative cases were related.)

In two clinical lectures, which I have given at Bellevue Hospital, I have ventured to denominate this affection, Puerperal Ammoniaemia.

In connection with the subject of the paper read, there is one other point to which I will call attention, and that is, the occurrence of peri-nephritis as a puerperal disease. An important monograph upon this affection has been written by Bowditch of Boston, and an excellent clinical lecture upon the same disease has been given by Trouseau, but I refer to it as a puerperal affection. It is not of frequent occurrence, but I have met with it several times in connection with epidemics of puerperal fever, and I have seen three sporadic cases.

I will not stop to describe the symptoms or discuss the pathology of this affection, but will briefly relate the three sporadic cases, to which I have alluded.

The first was a woman who entered Bellevue Hospital in my service three weeks after her confinement. As she gave her history, four days after the birth of her child, she was up and engaged in washing clothes, when she was suddenly obliged to cease her work on account of a most severe pain in her side. The next day she had complete retention of urine, and a doctor was called in who gave her medicine which cured this trouble in two or three days. After this she was able to do her house-work for a week or two, but she always suffered from pain in the side. The day before she entered the hospital, she again sent for the doctor, who told her husband that her case was bad and that she must go to the hospital. She had fever, chills of irregular recurrence, but not severe, constant pain over the left kidney, where there was great tenderness, and a circumscribed tumor in which I thought I could detect fluctuation. I called my obstetrical colleagues of the hospital in consultation, but we could not settle upon a diagnosis. Three days afterwards I passed an exploring needle into the tumor and found pus. I then made a free incision over the kidney and gave exit to about six ounces of pus. After its discharge a portion of the kidney could be easily seen. This patient made a good recovery.

The second case was a patient of the late Dr. Stillwell, whom I saw for the first time six weeks after her confinement. A few days afterwards, I evacuated a large amount of pus by an incision, and this lady eventually got well.

The third case was a patient of Dr. Purple, whom I saw, I think, about the fourth week after her confinement, and I then expressed the belief that a peri-nephritic abscess might be forming.

This lady had a peculiar temperament, she was very difficult to manage and she had a great horror of an operation. Some time afterwards, I again saw her with Dr. Purple and Dr. Buck. It was then

evident that the pus had worked its way down to the iliac fossa. Dr. Buck subsequently evacuated the pus by an operation, but I believe that she afterwards died from exhaustion.

DR. MARY PUTNAM-JACOBI remarked that in regard to the alleged anæmia of pregnancy, it was much to be regretted that no other data were appealed to than those established so long ago by Andral and Gavarret. She was not herself acquainted with any more recent investigations than theirs, but the present method of direct numeration of the blood corpuscles was so much more exact than the method of weighing the clot—adopted by Andral and Gavarret—that these early experiments decidedly needed control. Moreover, it seemed to her that there must be a certain illusion on this point, wherever, at least, the number of blood corpuscles for a given volume of blood was calculated; since an increase of plasmatic fluid, relative to the blood corpuscles, would occasion an apparent diminution in the latter, as effectively as if, the plasma remaining the same, the amount of corpuscles were really diminished, we should expect that the plasma would be increased, to meet the demand for plastic material made by the embryo; and the diminution of muscular activity on the part of the mother, must diminish *her* demand for the corpuscles whose oxygen would be required during muscular contractions. Hence again, even if the absolute amount of corpuscles *were* diminished, it should not imply a normal diminution below the real needs of the economy.

We have no assurance to what extent Andral and Gavarret's subjects, hospital patients, were in a normal condition. With regard to the fatty infiltration of the liver found in many of Dr. Chamberlain's cases, it is certain that this is found in a large number of pregnant women, where the pregnancy has been perfectly normal, and death has occurred, sometimes before parturition, from accidental causes, or intercurrent disease. Cornil—to mention no other pathologist—considered such fatty infiltration—to be distinguished of course from fatty *degeneration*—as a normal circumstance of pregnancy—and it is certain that, whenever the oxidation of fats is diminished, these became stored up, first in the adipose tissue, afterwards in the liver. The liver is the internal store-house of fat. Infiltration of the kidneys was less frequent, but even that might occur under the same circumstances. It is known to be normal in dogs.

It was evident from Dr. Chamberlain's histories, that in many cases no symptom of hepatic or renal lesion, no albuminuria existed before parturition, and he himself shows how nephritis has developed as a consequence of the local lesions of metro-peritonitis. In these cases, therefore, at least, of course the kidneys could not be held responsible for the predisposition to the puerperal accidents. Where nephritis did exist, however, during pregnancy, it seemed very plausible to suppose that interference with excretion of nitrogenous substances would favor septicæmic accidents in the same way that, according to Murchison, chronic renal disease extraordinarily aggravates the prognosis in continued fevers.

The very interesting experiments quoted by Dr. Chamberlain upon ligature of the ureters, and the excretion of urea by the peritoneum, have been already invoked to explain the dependence of general peritonitis upon acute nephritis. Bauer admits that the latter disease is sometimes the only cause of the former, and the speaker had recently seen a case where a woman was attacked by general peritonitis, three months after confinement, the health in the interval having been good, and whose urine, at the time, contained forty per cent. of albumen. After death, no uterine or other local disease was found to explain the origin of the peritonitis, but the kidneys showed all the signs of an acute parenchymatous nephritis.

DR. CHAMBERLAIN remarked that these lesions of the urinary system in general were very largely the effects of the general processes of puerperal fever, and that it was not to represent them as exclusively local lesions that he brought them forward in his paper. It was rather to show that as we reckoned metritis, phlebitis, and cellulitis, so we must also consider nephritis and fatty metamorphosis of the kidneys as varieties of the morbid puerperium, more frequent and more grave than commonly represented.

In a certain number of cases the patient recovered entirely from the metritis, peritonitis, lymphangitis, cellulitis, etc., yet had more permanent renal lesions, as evidenced by careful examination of the urine.

Regarding the catheter, he wished to be understood as maintaining that it was not necessarily its use that was detrimental, but that the use of an impure instrument, or the blind and rude use of a clean one, might be a frequent cause of puerperal difficulties. The use of the catheter for the purpose of removing decomposing urine from the bladder, was not only justifiable, but imperative.

With reference to hydræmia, the points made were, that the woman was shown to be in that condition, because, by absolute measure, the water of the blood was increased, and by absolute count the red corpuscles were diminished; the albumen was diminished, and the fibrin and white corpuscles were increased. It was the appreciation of the total change, as indicated by actual measure, that gave rise to the condition.

With regard to the hæmoglobin, the doctor regarded it as the oxygen carrier, and as such, it was the agent of normal combustion, and that normal combustion was the natural method of consuming the residual excretory elements in the blood, and that in the absence or diminution of that element in the blood, there was an accumulation of carbonaceous matter, which required only a slight change to take the form of fatty degeneration, both in the blood and the tissues. The statements of Andral and Gavarret were old, it is true, but he did not understand Dr. Jacobi to say that they had been invalidated. If not, age argued authenticity.—ED.]

SOME SUGGESTIONS WITH REGARD TO THE INSANITIES OF FEMALES.

BY

MONTROSE A. PALLEN, A.M., M.D.,

Professor of Gynaecology in the University of New York, Surgeon to Charity Hospital, etc., etc.¹

THE relation of diseases of the organs in the female pelvis to the general nervous system has not yet been properly elucidated. The reasons for this neglect of so important a subject are easily perceived in the absence of a thorough knowledge of the nerve anatomy of the reproductive system, and of data regarding the mutual dependence of menstruation and ovulation. Other impediments to the proper understanding of the relations of gynaecology to psychiatry are to be found in the unsettled state of physiological and pathological histology, the existing ignorance concerning the neuroses attendant on female pelvic lesions, and last, but by no means least, the *entire absence of records of the pathological condition of the generative organs of women incarcerated in asylums for the insane*. In the face of these facts, can we wonder that we still grope in the dark, and are at a loss for philosophical explanations based on histological and experimental research?

The frequency of metric, perimetric, and ovarian disease during menstrual life is one of the first things that fix the attention of the observant practitioner. He soon learns that while woman possesses the power to conceive, certain neurological phenomena also exist, and pathogenetic changes are more apt to follow in the wake of physiological formative action than at any other time. This pathogenesis is represented by disturbances of motility and sensibility, such as anæsthesia, analgesia, hyperæsthesia, clonic and tonic spasm, partial or complete paralysis of motion or sensation, or both, not only of the contents of the pelvis, but of the extremities and trunk, all of which

¹ Read before the New York Obstetrical Society, January 2, 1877.

may terminate in that protean trouble, hysteria, or oöphoria. These troubles, however, may not have the least connection with the hysterical element, but may exist free from such complication, and be entirely dependent upon an anæmic or hyperæmic condition of the brain or spinal marrow. That there is a most intimate relationship between female pelvic disorders and insanity has only to be mentioned to be recognized as another link in the chain connecting gynæcology to psychiatry. The experiments of Hitzig give us an insight into the cause of spasmodic flexion and extension, in consequence of irritability of certain cerebral convolutions, which, co-added to the well-known experiments of Claude Bernard, in the production of polyuria by irritation of the fourth ventricle, in all probability sound the key-note to the pathology of hysteria. That hysteria is produced by reflex irritability, originating in pelvic disease, there can be no doubt, and it is a phenomenon peculiar to females. The so-called hysteriform manifestations of the male are derangements of motility and sensibility, the direct result of convolution and ventricular irritability, depending on emotional or pathological causes interfering with the brain-substance circulation. The resultant phenomena are very similar in both sexes, but clearly different in cause, and for that reason I would eliminate the term hysteria from the nomenclature of disease in the male, and substitute therefor *neurospasia* (from *νευρον*, a nerve, and *σπαῶ*, I draw), as more indicative of alteration of nerve action independent of uterine or ovarian production. The neuroses of pelvic origin which manifest themselves outside the generative circle are peculiarly symptomatic of alterations of nutrition, such as intercostal neuralgia, coincident with chronic endometritis; mastodynia with metritis; præcordial pulsation and ilio-inguinal neuralgia in ulcerations of the cervix; occipital and vertex headache produced by displacement (first noticed by Beccaria as one of the symptoms of pregnancy); and the lumbar, sacral, and crural distress common to all uterine disorder. So severe are many of these neuroses that under their influence, combined with the use of anodynes and alcoholic stimuli, healthy brain action breaks down, and will-power is destroyed. Dementia, mania, and insanity not infrequently ensue, and many women are pronounced incurably deranged, deprived of their liberty, and confined in lunatic

asylums, who might be restored if a due appreciation were given to the intimate relationship of gynæcology to neurology. So vast, then, is the scope of this subject, that I propose to limit myself to some general considerations of insanity in women resulting from sexual troubles. The statistics of the causes of insanity in quite a majority of females clearly point to an origin outside the brain. Emotional, physical, and moral influences, if properly analyzed, would evidently be traced in large numbers, possibly the larger number, to pelvic difficulties. The congenital forms of insanity, as well as those produced by epilepsy, traumatism, and intercurrent disease, are, of course, excluded from this class, yet we may even here detect relations of great significance. Most psychological writers make mention of the influences of menstruation and the menstrual moli-mina with regard to the exacerbation and increment of the mental disturbance, which is relieved when menstruation makes its appearance, where such conditions supervened coincident with, or dependent upon, suppression of the menses. This is well authenticated by explicit observations of gynæcologists in private practice and medical attendants in insane asylums. Pregnancy also presents numerous examples of mania and insanity supervening upon conception, and ceasing after parturition, not to reappear until another pregnancy ensues. So, too, the common and frequent perturbations of intellect arising at the lying-in period, the puerperal mania (manifestations not due to the toxæmia usually inducing delirium from cerebral hyperæmia), purely reflex cerebral irritations in consequence of uterine contractions and the expulsion of the fœtus.

The insanities of women resulting from pelvic or sexual causes are :

Hysterical and Climacteric,
Parturient,
Pathological.

This classification is simply clinical, in accordance with the manifestations as observed in daily practice. Before considering any one of these various classes, let me premise by stating that I regard thought and all mental actions to be the results of brain elimination ; and, in proportion to the quantity and quality of the gray matter of the brain, so will be the intellectual capacity of the individual. Any change, either progressive

or retrogressive, in the metamorphosis of the ultimate cell structure of the brain will upset that symmetrical balance of action known as sanity, and the various grades of insanity are developed. It is true that many¹ persons die demented whose brains are, as far as discoverable, free from pathological manifestations, but it does not prove that cerebral action was not pathological or asymmetrical from peripheral causes during life. We cannot weigh force, heat, light, electricity, but we can govern and direct them by a properly constructed machine. The locomotive cannot of itself generate heat, speed, momentum, or steam—a correlation of these factors of its power must be directed by the engineer and fireman. The engineer and fireman of the brain exist, because we see their results in perception, consciousness, ratiocination, and volition. But who are the concealed and invisible directors? Holofernes says, "These are begot in the ventricle of memory, nourished in the womb of *pia mater*, and delivered upon the mellowing of the occasion." Hysterical insanity frequently manifests itself upon the approach of puberty, when the body becomes matured and mental activity aroused. Sexual development initiates new and extraordinary physical changes. The erotic and sexual impulse is awakened. The girl glides into the woman, and the fact of social relationship dawns upon her. Under these circumstances, self-consciousness is usually normal, but its disturbance is easily effected by the co-operation of physical and psychical causes occurring coincidently with the development of the body of the uterus, the dehiscence of the ova, and menstruation. That hysteria may pass beyond the bounds of recognized mental health is evident, for we have but to recall its manifestations as determined by catalepsy, epilepsy, or paralysis. It is a neurosis, the result of general deterioration of innervation, in which the entire nervous system is implicated, wherein sensibility and motility are more or less intensely affected in proportion to the impressionability of the individual. This individual impressionability is the expression of certain

¹ I am thoroughly convinced that all insanities are symptomatic of brain-cell change, either temporary, from toxæmia or reflex irritability, or permanent, in consequence of structural lesion. The microscope ought to discover these changes in all cases of death where the insanity had existed any length of time.

cerebral irritabilities as conveyed through the spinal system, and generally recognized as reflex. It is manifested like epilepsy by a distinct *aura*, most frequently unperceived, passing from the genesic and copulative system, and may be localized in the sensory, motor, or ganglionic circle, or it may invade them all, or it may involve cerebation. It never arises solely in the uterus, or in the ovaries, but may come from some functional disturbances of both. No case of pure hysteria ever existed without excessive (but sometimes unrecognized or concealed) sexuality, originating in the reproductive system. The hysterical *aura* invades the various ganglia, either to abide there or simply to impress them. The woman rarely suspects the real source of her trouble, but the conditions for its production must exist even in the most virginal breasts. It may for a long time be latent, but under the influence of marriage and the consequent stimulation of the sexual system, it bursts forth to inundate a life that hitherto was as quiet as the unruffled bosom of the chaste Diana. Who has not noticed the libidinous and sensual motions of women when laboring under hysterical paroxysms, who unconsciously abandoned themselves to the voluptuous sensations of an unknown and pent-up passion? And yet these same women, when freed from the spasm, most frequently clonic, were, as far as they knew themselves, pure in mind, and, like Ophelia, for the time had been

“ Divided from herself and her fair judgment,
Without the which we are fictions, or mere beasts.”

The neurosis hysteria is the analogue of that cerebral neurosis, the insane temperament which cannot resist the stress of adverse circumstances, and bursts forth as homicidal mania, pyromania, kleptomania, and transitory mania. The genital apparatus is complex in its functions, and the emotional influences that frequently govern it are uncontrollable, as evidenced by hysteria. These emotional influences may be purely psychological, or developmental, or pathological. An impressionable and lively imagination, the rapid and swelling growth of the pelvic contents, or a fluxionary or congestive movement may, and does, pervert the workings of the genital nerve-circle to disturb the whole economy, and the persistence and permanence of these causes may destroy reason. When insanity supervenes,

numerous and abundant clinical observations justify me in stating that frequently it can be remedied by a correct diagnosis and a judicious treatment of coexistent pelvic disease. If the recital of individual cases would enhance the value of this statement, I might detail some very interesting histories, where procidentia of the uterus dragged upon the bladder, which in turn displaced the vagina and clitoris, producing repeated sexualities, terminating in mania; where a hypertrophic elongation of the cervix constantly irritated the clitoris, ending in mania; where a retroflexion so disordered the sentient nerves of the vulva (pruritus) that constant scratching produced self-pollution, followed by hysterical hyperæsthesia and apparent idiocy. This recital could be made to embrace a category of some score of cases, observed in the better cared for classes of society, who are not usually hurriedly immured in asylums.

Seven-eighths of these cases were cured and restored to sanity by proper and persistent treatment. None of these women would have been rendered insane, if they had not been hyperæsthetical and hysterical. Excessive irritability of the nerve-circle presiding over the orgasm-function developed an unhealthy cerebral action which destroyed reason, but which was not incurable, because there was simply undue reflex irritability; there was no delirium or mania from cerebritis or meningitis, but a psychosis produced by pelvic neurosis. The insanities of the climacteric of women are likewise most frequently connected with the retrogressive metamorphoses of approaching senility, when the menopause is being established in consequence of atrophy of the ovaries and uterus. The manifestations at this period are usually less of a maniacal form, but assume the garb of hallucination, fixed delusion, melancholia, dipsomania, or religious fanaticism. Pathological causes here enter largely into the etiology of the insanity, such as the persistence of disordered hepatic circulation engendered by previous uterine trouble, the presence of a neoplasm of the ovaries or uterus, chronic engorgement or inflammation of these organs. A very frequent form of fixed delusion of the climacteric is pseudocyesis (spurious pregnancy), several examples of which I have seen, and one even went so far as to hurriedly summon my attendance to take charge of her rapidly approaching confinement. When I reached the residence of the lady in question, I found

her to all intents and purposes in active labor, having strong and regular pains. An examination revealed an empty but hypertrophied uterus, much distention of the intestinal canal, and an abundant abdominal adipose deposit. This patient had ceased to menstruate eleven months prior to the date of my visit, and never having borne children, fancied herself pregnant, and made due preparations accordingly. The delusion continued for upwards of a year, and ceased apparently upon a cure of the uterine enlargement. A similar case is related by Dr. Crichton Browne, of a woman long past the climacteric, who actually underwent the real or feigned pains of labor for four days, at the end of which time the menstrual flow supervened and the delusion ceased. This woman had not menstruated for years. Two other cases of climacteric mania resulting from metritis (one with retroflexion) have also been placed under my care. The case with retroflexion became so violent that she was removed to an asylum, but after a few months of judicious treatment to the uterus, improved so much that she returned to her home, and ultimately recovered. The family of the other patient was influenced by a medical gentleman, who did not coincide with me as to the pathology of the alienation, and she was subjected to psychiatric treatment entirely. Her mania persisted for about eight months, and disappeared after the discharge of a large quantity of pus per vaginam. Suppurative pelvic cellulitis fortunately did that which might have been sooner done by proper gynæcological interference. These two cases are particularly instructive, and induced me to make inquiries about the pelvic troubles of insane females confined in some of the asylums. I regret to say that, as far as my efforts were made, the results are negative. I know of no institution where insane women are treated that has a regularly organized gynæcological staff; and I have no information of a reliable character that these unfortunates are subjected to such continued and scrutinizing observation of the pelvic organs as gynæcologists believe should be made. Many cases undoubtedly might be cured if an educated gynæcologist were attached to the medical staffs of the insane asylums.

With regard to the insanities of parturient women every obstetrician is more or less familiar. From the very inception of impregnation to the completion of gestation, some women

are always insane, who are otherwise perfectly sane. Others, however, manifest defective mental integrity in the form of whimsical longings for the gratification of a supposed depraved appetite, whilst some labor under every grade of partial or complete alienation prior or subsequent to parturition. Puerperal mania is also quite frequent, not as a pathological result of uræmia, toxæmia, or cerebritis, or meningitis supervening upon eclampsia, but simply as a consequence of pregnancy and parturition. One case of puerperal mania of twenty months' standing, which was aggravated to such a degree at each monthly menstrual molimen as sometimes to require very strict watching, was perfectly restored by directing the fluxionary movement of the ineffectual menstrual discharge to an effective flow. For three months this patient was subjected to a proper nourishing regimen of beef, milk, and beer, together with a medication of gentle but frequent catharsis, and on every twenty-fourth day, and for four days succeeding, leeches were applied around the arms and to the cervix uteri, very decidedly ameliorating and lessening the fury and destructiveness of her paroxysms. Sleep was produced under the combined influences of bromides of potassium and calcium, with ergot, or when very violent, chloral and monobromate of camphor. The fourth menstrual molimen was followed by the normal uterine hemorrhage, and the recovery was rapid and permanent therefrom. In this instance the menstrual nixus was incomplete, evidently in consequence of hyperæmia of the utero-ovarian plexuses of blood-vessels, which possibly would not have persisted if the parturition had been normal, and uterine subinvolution had not taken place. Certainly, unloading these vessels and relieving the fluxionary movements coincident with menstruation rendered the function complete, and its re-establishment after many months' retardation was followed by mental integrity. Here was another very pertinent fact towards establishing the doctrine that many cases are purely peripheral, where psychiatric treatment alone would have been injudicious and inefficient. Possibly the menstrual discharge might have supervened of itself in the course of months or years, but in the meantime reason might have been entirely dethroned, or other pelvic pathological changes engendered, which would have induced new complications. The

unaided re-establishment of the catamenia, followed by sanity, might have been claimed as the result of psychiatria purely, which, in this very manifest instance, would have been a *post hoc* instead of a *propter hoc*.

So numerous and patent are the pathological pelvic insanities that a specific mention is inadmissible in these general remarks. Suffice it to say that numerous cases can be cited to illustrate how epilepsy followed by dementia can be produced by dysmenorrhœa as symptomatic of utero-ovarian disease; of nymphomania developing insanity from hypertrophy of the clitoris or disease of that organ; of melancholia consequent upon chronic fundal metritis influencing the woman to suicide; of violent mania because of vaginismus disappointing the hopes and expectations of the marital bed; and so on to the end of the chapter. The question now arises, of what use is a knowledge of the dependence of insanity upon gynæcological causes? In a sociological point it develops much that must be reconsidered and repealed with regard to the legal rights of insane women, and it refers to the duties of medical men with regard to the commitment of this class of women to an insane asylum where gynæcological treatment is not a very prominent feature in the psychiatria. There are no adequate safeguards for the protection of so-called insane women. The way to the mad-house is far too easy, and once the prison gates have closed, the future is only too surely foreshadowed in the lines of the immortal Florentine:

“All who enter here leave hope behind.”

Commissions “*de lunatico inquirendo*” are in many instances but a farce—a simple statement from two or more physicians being sufficient to consign the woman to the asylum; the jury empanelled, when one is called, is usually composed of unprofessional persons, ignorant of the physiological life of the woman; and the lawyers who conduct, as well as the judge who tries it, are governed by a general common law, modified by a few inefficient statutory enactments.

Another great problem to be solved by a knowledge of this question is the civil and criminal responsibility of women who plead insanity at the bar of justice, and who frequently are

kleptomaniacs, pyromaniacs, and infanticides because of sexual trouble and pelvic disease. The demands of justice and the well-being of the state are equally imperilled by the loose impressions prevalent concerning the civil and criminal responsibility of women. Deception might be unmasked and malingering unveiled, or at least the rights of law and order could be given the benefit of the doubt, if none of the salient symptoms of peripheral sexual insanity existed. For these reasons, as much for the accused as the accuser, we need a reform in the methods of examination, as well as in the treatment of all women supposed or pleading to be insane.

Are we to consider pregnant women, with the psychical longings so common to them, laboring under totally uncontrollable fixed delusion, and therefore irresponsible in legal actions; or must we accept the doctrine commonly held, that these longings are nothing more than the perversion of a naturally weak or bad nature, easily controlled or overcome? The answer is not readily given, otherwise than each individual case must be diagnosed upon its own merits, and that the diagnosis must be based upon the subjective history of the woman, her hereditary peculiarities, the station of life she occupies, the motive which impels her, the legitimacy of her offspring, and a thoroughly conducted physical examination.

Shall we condemn a young mother as the wilful destroyer of her offspring, and inflict the direst penalty of the law, because her foetus was smothered in bed by her side, or found in the excavation of a privy vault? Is it not probable that in many instances a puerperal mania, transitory in its nature, may have impelled her to the deed, or being ignorant of the premonitory symptoms of labor, she was taken with active pains whilst obeying a presumed call to evacuate the rectum, and extruded the child without the power to rise or the actual knowledge that she was giving birth to an infant?

Do not women, especially those who from fear, shame, grief, or despair, frequently seek a sequestered spot to bring forth, and in the solitary anguish of unholy maternity utterly break down in strength of duty as well as body? Possibly the agonies of parturition produce syncope, and, under these circumstances, may not infanticide supervene? Here, then, are the hypotheses of cases encountered frequently in practice,

wherein the degree of criminal or moral responsibility must be decided by medico-legal experts, who are in a measure antagonistic to the judge, who is governed by his statutes, which do not mitigate the crime or soften the offence. The result is either an acquittal upon technical grounds, or a conviction because of failure to prove, as far as the law recognizes, an irresponsible condition at the time of the committal of the act, or by the establishment of the fact that it was premeditated and done with malice prepense, entirely overlooking the fact that among the commonest and most frequent peculiarities of the insane is their premeditated criminal action. The woman, under all reasonable conditions, is entitled to the benefit of the doubt, because her cerebral life is unbalanced, first, by the peripheral and somatic causation of pregnancy; secondly, because emotional excitement, particularly in a brain already abnormally irritated, often limits or entirely destroys all well-balanced cerebral action. To obtain an enlightened justice and an impartial execution of the laws, there should be some scientific definition as to what constitutes civil and criminal responsibility. This task is hedged in by numerous difficulties which may be used by a dissembler to confuse the physician, as when self-command, power of concealment, and dissimulation, peculiar to many of the insane, are used to the detriment of the good judgment of inexperienced, and sometimes expert, examiners. In the detection of simulation, or the discovery of mental alienation, much tact and cleverness are required of the expert, involving a knowledge not only of psychiatric but of gynæcological medicine, together with great experience and a thorough appreciation of the motives or incentives to action. Most writers on jurisprudence, particularly the Continental authors, are disposed to maintain that these points are exclusively questions of law, and do not belong to the medical expert, because there are legislative enactments and codified laws to cover the ground. This view of the question is entirely wrong, notwithstanding it is recognized in the rulings of the courts. We must remember that law is not always justice, and that many of these enactments possess no other merit than antiquity, being as old and about as scientific as the "jury of matrons," or even antedating this happily repealed odium of the English statute-book.

Scientific research daily demonstrates the inefficiency of such a proposition or principle as that of criminal responsibility being actually definable by "the psychological possibility of the penal code." As well maintain that thought or volition shall be enunciated according to legislative action.

The constantly changing relations of individuals to communities, and new forms of education to meet the wants of new developments, must of necessity beget legislation sufficiently comprehensive to meet the present wants of a society or a people, and not to inflict upon them a code of the past altogether at variance with freedom of thought and liberty of action. We must have statutory enactments repealing the present methods of holding a commission *de lunatico inquirendo*, and an abolition of the trial of the insane (real or feigned) by a jury of unprofessionals. A distinct court should be formed of medical experts, a court of psychiatric jurisprudents, before whom all cases should be brought, where the evidences of civil or criminal responsibility should be thoroughly sifted, and then an indictment for crime presented, or a commitment to an asylum recommended. We should thus be enabled to mete justice to the guilty, or dole mercy unto those who are irresponsible.

The State legislatures can only be influenced by facts of such scientific import as can be obtained by a searching inquiry into the causes of insanity in women, the methods of treatment, the nature and character of change wrought by pure psychiatria, or by a mingled gynæcological and psychiatric treatment, and the post-mortem appearances of the sexual organs as well as the brain. When we can accomplish these results, we may then be able to approach this subject with intelligence, to direct its sociological imports to practical workings, and thus establish a new era by expunging certain unjust and badly administered laws from the statute-books, and substituting therefor rational investigation as well as just and merciful ordinances for insane women.

ON EXTRA-ABDOMINAL VERSION.

BY

DR. LEOPOLD ELLINGER,

Stuttgart, Germany.

Two successful cases of version by external manipulation occurred recently in my practice. I took but imperfect notes of the cases at the time, thinking the method universally adopted, and not until I had conversed with a number of colleagues, and reviewed the literature of the subject, did I find the reverse to be the case. One gentleman, in practice for twenty-two years, and doing a large obstetric business, was induced to perform version by external manipulation only once, and then with perfect success, although the mortality of children in transverse presentations under his care amounted to 24 per cent. Another friend of mine likewise had occasion, among about one thousand artificial labors, to perform but one external version, and still another friend, doing a large obstetric practice for over fifty years, in a city of some size, makes precisely the same report. Nor have I myself ever had an opportunity to treat a transverse presentation, except when far advanced in labor, and have therefore had to mourn many a shattered hope.

In the year 1807 Wigand described in the *Hamburg Magazine for Obstetrics*, Vol. I., No. 1, a method of performing version *during labor* with one hand in the uterus, assisted by the other manipulating the abdomen. This plan could scarcely be surprising to any obstetrician, who was not in the habit, while one hand was busy within the uterus, of putting the other in his pocket. In his theoretico-practical text-book Froriep (1810) proposed to attempt to change the position of the fetus already during pregnancy and shortly before labor, a proposal accepted by Wigand in 1812, but apparently little employed at that time, for Naegele, in his text-book published in that year, does not mention the subject at all. In Dr. Justus Heinrich Wigand's work, "Die Geburt des Men-

schen," edited by Dr. Franz Carl Naegele, in 1820, we find the first brief description of external version.

Kilian¹ recommends teaching the practice to midwives, and entrusting them with its execution. D'Outrepoint also speaks highly of it in his writings, and particularly in his lectures soon after the year 1840.

Scanzoni does not appear very enthusiastic in favor of the method in 1853,² but in 1867³ expresses a more decided approval of it. Esterle, of Trient,⁴ Carl Braun,⁵ and his assistant Kuhn,⁶ also C. Hecker,⁷ give an unqualified support to the measure, in the face of which praise the following opinion, expressed by Braxton Hicks in his excellent monograph on "Combined External and Internal Version,"⁸ exerts a chilling influence: "In order to accomplish complete version, solely by external manipulation, a considerable degree of practical ability is essential—more, indeed, than most physicians possess. Even in the most able and dexterous hands this measure always remains uncertain, and above all will fail most frequently at the very time when we need it the most, that is, during actual labor."

Schroeder's work seems destined to be the standard text-book on Obstetrics for some time to come. In the first edition (1870), and in the fifth (1877), he expresses himself regarding the method of pure external version in substantially the same terms, as follows: "The plan is decidedly to be adopted in all cases where the opportunity is given of making an examination during pregnancy, especially as the change of position generally succeeds without difficulty. Still, we must not expect too much from this practice, because, in those very cases in which the head does not present at term the mobility of the child is usually very great, and the chances of the child's remaining in the vertex presentation, into which it has just been converted, are thus exceedingly small." On page 631 Schroeder further says, referring to early extra-abdominal version: "But only very rarely will the longitudinal position continue until labor."

All authors, so far as I was able to learn (Schroeder also, l. c.), follow Wigand in advising, after extra-abdominal version,

¹ Die Geburtslehre, 1839. ² Lehrb. d. Geburtshülfe, III., Ed. 1853. ³ Ibid., IV., 1867. ⁴ Annali universali di medicina, Schmidt's Jahrb., 1859, Vol. 104, p. 76. ⁵ Allg. Wiener Med. Ztg., Dec., 1862. ⁶ Wiener Med. Halle, 1864. ⁷ Klin. d. Geb., Vol. II., 1864. ⁸ Translated by W. L. Kühneke, Göttingen, 1865, p. 5.

that the woman should occupy the decubitus on the side corresponding to the location of the head, and that the latter should be kept near the pelvic inlet by passive pressure with pillows and abdominal supporters. Scanzoni alone (1867) speaks of guarding the head in its new location with the hand, provided the labor be not too tedious, in which case pillows and supporters are likewise to be employed; and Esterle, in one case, had the head kept down by his assistant.

Judging from the two cases of extra-abdominal version which I have recently met with in rapid succession, I do not doubt that the result depends entirely on the exertion of *active* or *vital force* in retaining the head; whether the repeated versions some time before labor had any influence on the ultimate success of the operation is a question I will not endeavor to decide.

Even experienced and conscientious midwives generally neglect to call in a physician at term, because, according to old-established usage, nothing would result therefrom. But if the midwives were taught otherwise, and were also instructed to examine all pregnant women at a sufficiently long period before term, and finally, *if the hand of the midwife, nurse, or any other person present were employed to keep the head in the position to which it has been brought by external manipulation*, then, unquestionably, many a transversely presenting child would be saved from an untimely death.¹

The two cases which lead to the writing of this communication are the following:

CASE I.—Mrs. B., 33 years of age, in good health, mother of three naturally born children, was delivered by me, on February 7th, 1873, by means of podalic version, of a transversely presenting dead child. The next confinement, one-and-a-half years later, was normal, and the child was born alive. January 11th, 1876, the midwife Rincken-

¹ With us the office of a midwife usually devolves on the family physician or accoucheur. Let him, therefore, accept Dr. Ellinger's advice as regards the examination of all pregnant women shortly before term, and the rectification of the malposition then, if there be one, or at least its detection at a period when that knowledge will enable him to be at hand and to perform external version at the very beginning of labor, and as regards the fixing of the presenting head with the hand of any one present, until it is firmly engaged in the brim; and further, let our medical students be taught these rules, and we doubt not that Dr. E's prediction will be fulfilled as well in this country—where assuredly the circumstances calling for the above directions exist in a sufficient degree—as in Germany.—EDITOR AND TRANSLATOR.

berger, in Cannstadt, diagnosed a transverse position, which I verified on the same day, the head being located on the left side, and the back pointing anteriorly. I readily succeeded in pushing the head down to the superior strait of the pelvis and in keeping it there with my hand. On removing the hand, however, the fœtus at once returned to its previous transverse position. This same manœuvre was repeated on the 17th with a like result, and the left lateral decubitus was then ordered. On the morning of the 19th labor commenced. At 2 P.M. I found the head but little below the horizontal plane, and therefore pushed it down to the pelvic brim, and instructed the midwife to keep it there with her hands, particularly at the beginning of each pain. At 11 P.M., the child was born alive spontaneously in a vertex presentation, the head being covered with a caul, and the liquor amnii not escaping until after the birth of the head.

CASE II.—Mrs. Kress, wife of a manufacturer of cigars of this city, had been naturally delivered of six children. In her seventh pregnancy, early in February, 1876, the midwife, Glaser, detected a transverse position. I easily turned the child by external manipulations, bringing the head down to the pelvic brim, and repeated this operation once a week during the three ensuing weeks, with the invariable result that, as soon as the woman resumed the erect posture, the fœtus also resumed its transverse position in utero. During these repeated examinations I was enabled to decide definitely which end was head and which breech, a question as to which I had been in some doubt at first. March 7th, 1876, at six o'clock A.M., the waters broke. Being called at one P.M., I found the head somewhat lower down on the left side than before. I found no difficulty in pushing it down to the brim, where it was retained by the hands of the midwife and the husband alternately. At midnight a living child was born without further artificial interference.

My friend, Dr. Wolfgang Schmidt, of this city, has communicated to me the following additional case, with remarks, which I give in his own words:

“During a conversation with Dr. Leopold Ellinger on the subject of external version of transverse presentations during pregnancy, my attention was called by him to the universal neglect with which this manipulation is treated. Although I readily found an explanation for this apparent neglect in the circumstance that physicians in general practice but rarely have occasion to examine women during pregnancy,¹ and there-

¹ In Germany, the great majority of normal confinements, even in the best families, are conducted by midwives, and the accoucheur is called in only when some unforeseen disturbance occurs, requiring his active interference. In this country, however, where physicians are engaged for the accouchement months beforehand, nothing would be easier than to insist upon an external examination, at least, some time before term, and we do not think that many

fore seldom meet with an opportunity to perform this operation, which, besides, as I see from the text-books, is not particularly recommended by obstetricians, nevertheless I determined, if a suitable case should present, to give the method a trial. Chance favored me, and I had not long to wait for the case.

"CASE III.—Mrs. H. had been under my care, during her third pregnancy (her first two children were delivered with the forceps), for some time for chronic bronchitis with spasmodic cough, when she sent for me on November 27th, 1876, because during a severe paroxysm of cough in the preceding night there had been a discharge of water from the vagina. On making an examination I found the abdomen broad and lax, greatly distended by an abundance of liquor amnii, corresponding in size to the end of the eighth month, the child in a transverse position and exceedingly movable, but no sign whatever of the inception of labor. In reply to her question, when labor was likely to begin, I told her, therefore, that a week or more might elapse before actual pains set in.

"I ordered her to bed, and attempted to rectify the position of the fœtus, but failed, because the head, which could be grasped almost directly through the lax abdomino-uterine walls, immediately slipped away as soon as the pressure was removed; the same result attended all my efforts in that direction during the ensuing days.

"Notwithstanding these continued manipulations only very slight uterine contractions, scarcely perceptible to the mother, were excited, and no amniotic fluid whatever escaped.

"December 1st.—I succeeded for the first time in guiding the head into the brim in such a manner as to find it retained there after I removed my hand. I then informed the midwife, and especially the mother, of the exact position of the child, and desired them to watch the abdomen carefully and to repeat the manipulations performed by me as often as practicable; thereby I attained the result that at my subsequent visit the transverse had been changed to an oblique position, and the head needed but very slight pressure to replace it in the brim.

"During the night of December 4th to 5th, a second discharge of water took place, and on the 5th the palpation of the abdomen excited distinct and to the mother herself perceptible uterine contractions. As the lady was becoming impatient, and I myself considered the time arrived to expedite the labor, in spite of the three weeks still wanting to term, in view of the preceding abnormal deliveries, I ordered a hot sitz-bath on the evening of the 5th, which was followed in several hours by vigorous pains and the consequent speedy and easy birth of a living child in a vertex presentation.

ladies would object to this innovation, if the reason for and importance of it were clearly stated to them. Soon it would become a custom no more to be objected to than the usual indispensable vaginal examination during labor.—
ED. AND TRANSL.

This gratifying result, involving so small an expenditure of time and trouble on my part, cannot but induce me to assist Dr. Ellinger in again directing the attention of the profession to this excellent method. In conclusion, I would suggest that a precaution not to be overlooked, if we would insure success, is the acquainting of the mother with the nature of the difficulty and the means to be employed to remedy the malposition, a measure the utility of which was demonstrated in my case."

CONGENITAL OCCLUSION AND DILATATION OF LYMPH CHANNELS.

BY

SAMUEL C. BUSEY, M.D.,

Washington, D. C.

Prof. of the Theory and Practice of Medicine, Medical Department of the University of Georgetown; one of the Physicians to the Children's Hospital; Physician to the Louise Home.

(With thirty woodcuts.)

(Continued from January number, p. 23.)

THE firm, painless, non-compressible and non-fluctuating masses, separated by furrows in the integument, which mark the flexures of the skin and the ordinary form of development of the panniculus adiposus in the thigh of the newly-born, are mainly composed of fatty and connective tissues. The formation of these fatty enlargements into lobules, masses, or folds, not unlike, objectively, lipomatous developments, is in a measure due to that peculiar and normal anatomical arrangement and structure of the connective tissue of the skin which at the natural flexures and furrows is either directly connected with the superficial fascia, or there is at such places but very partial formation of the panniculus; and consequently, if any, far less and much slower accumulation of fat along the course of such furrows or indentations. In Chevalier's case and in my own, as is usual in similar cases of hypertrophic

development, the skin was much thickened, hardened, and firmly attached to the subjacent tissue. In the latter case the hyperplasia and condensation of the connective tissue, which imparted to the skin its abnormal firmness and immobility, was also exhibited in the firm, sharp edges of the circular openings through the cutis vera, through which the fluid escaped into the cuticular vesicles and in the grooved character imparted to the superficial vein on the outer aspect of the limb.

In those cases where the hypertrophy is associated with concurrent and recurring attacks of erysipelatous inflammation, the enlargement is probably circumscribed by the limits of the inflammatory processes. The extension of erysipelatous inflammation may be limited or hindered by the increased thickness and firm attachment of the skin to the underlying structures, as about joints and along superficial bony margins, also by the borders of portions of the integument where the direction of tension changes—the track of extension being usually in direction of the greatest tension of the portion affected. The extension may also be hindered by the natural flexures of the integument. It is, nevertheless, true that the panniculus adiposus, in its normal physiological development, presents a more or less lobular structure and formation, and when, as in Case 1, the enlargements are defined by the outlines of the natural arrangement of the lobular structure of the panniculus, it is more than probable that the hypertrophy is simply an exaggeration of the normal physiological development.

The foregoing examples of the division of the abnormal enlargement into lobes by deep furrows exhibit no general law governing such formations. It is found in both the acquired and congenital forms, and in cases in which the hypertrophy is limited to the integument, as well as in those cases in which the subcutaneous cellular tissue and panniculus adiposus are involved. The joint-flexures are exempt or but partially invaded, and flexibility is only disturbed by the mechanical obstacle presented by the size and close apposition of the masses. In the case of cranial tumor (No. 6), the furrows corresponded partially with the course of the sutures, the neck lobes were apparently limited above and below by the integumentary furrows formed by the lateral flexion of the head upon the neck and of the neck upon the trunk, and in front by

the trachea. In neither of the acquired cases where the foot was involved, was the plantar surface invaded. In those cases, among the acquired forms, where the disease began in the thigh or leg, and subsequently extended, sometimes after a very long interval, to the leg or foot, the extension was not by continuity, but by separate invasion of the parts above or below the neighboring joint. These circumstances would indicate that the localities of tendinous and aponeurotic attachments, where the fibro-areolar fascia is less abundant, or nearly absent, as in the plantar and palmar surfaces, and where the deep fascia, an inelastic and less yielding membrane, serves the purposes of insertion and protection, were less favorable for such developments than the regions abundantly supplied with the loose superficial fascia and panniculus adiposus. But the immunity of the plantar and palmar surfaces, as will be shown further on, only attaches to the acquired forms.

The movements of the joints (which fortunately are usually painless), in those cases where the lobules encroach upon the flexures of the limb, and continuous flexion of the member during the progress of the development, as is the case with the extremities of the fœtus in utero, must be important factors in determining the boundaries of the masses situated in the immediate vicinity of the joints. In the following case (No. 8) both knees were involved, and but a few superficial furrows were preserved. This child was born in vertex presentation, and the equable tumefaction of the left lower limb would imply that in utero the knee-joint was extended; yet the partial preservation of the furrows at the knee-flexure and on the inner and posterior surfaces of the thigh would indicate that at least a position of semi-flexion was maintained. The pressure, if thus maintained, would seem to have been sufficient to have partially preserved the natural furrows of the integument of the thigh. But in Case 9 (Fig. 14), in which the enlargement involved the entire right lower limb, invading alike both the knee and ankle joints, the surface was marked by several deep "transverse dimples," which did not, however, correspond with the usual anatomical arrangement of the integumentary furrows of the lower limbs of the newly born, as they are marked in cases where the lobular formation of the panniculus adiposus is well developed, or in excess, as in Case 1.

These cases (8 and 9) are also in contrast with the acquired forms, in that the hypertrophy has invaded both the knee and ankle joints. These discrepancies are probably due to different pathological conditions.

CASE VIII.¹—Description from an alcoholic preparation of a child which lived 11 days, and died of icterus. Fig. 13. The child measured in length 46 ctms. Both legs were enlarged. At the inguinal fold the left measured 18 ctms., right 16 (in circumference), at largest part above the knee, the left 20, the right 12; at the ankle, the left 14, right 9. Distance of right heel from crista ilium 25 ctms., to point of great toe 10; length of left foot 9. On the left leg were a few nodes of pea size, and bluish red. The skin was everywhere thickened, covered with woolly hairs and immovable. The sole of foot was thickened and convex. First three toes greatly enlarged, second and third webbed. Skin covering ankle,

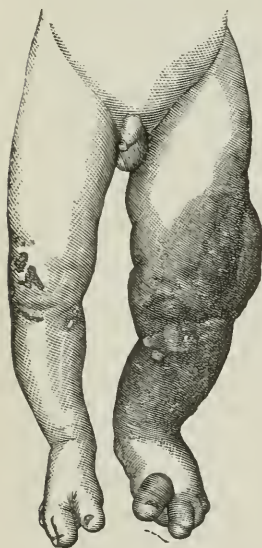


FIG. 13.

knee, four smaller toes, and external surface of thigh bluish-red. The swelling was mainly due to the proliferation of the subcutaneous cellular tissue; adipose tissue only being demonstrated by the microscope, except upon the anterior surface of thigh, ball of great toe and sole of foot, where it was greatly augmented. Fat cells not enlarged. Muscles on abdomen pale, on thigh and leg brownish-red. Venous system abnormally developed. Femorals and saphena absent; but two large veins arose one from each side of the great toe, which in their ascent received numerous large branches. All were without valves. Two of the three globular tumors upon the inner side of the knee, the large tumor upon the external and the more diffused one upon the posterior aspect of the thigh were colossal venous cavities, filled with blood coagulated in layers and imbedded in brown connective-tissue layers. The large tumor on dorsum of foot consisted of a perpendicular chain of varices, which communicated with the tumors about the knee.

In the right leg the venous system was normally developed; the arteries were alike in both and natural. The enlargement of the right leg was due to excessive development of the adipose tissue, and wherever on the left leg and buttock there was deficient, or, cer-

¹ Specimen presented to Obst. Soc., Berlin, by Dr. Rose, through the favor of Dr. Martin. *Monatschrift für Geburtskunde*, Bd. 29, 30, 1867, p. 346.

tainly, no excessive development of the venous system, the adipose tissue was in excess.

This specimen presented a co-existence of fibromatous and lipomatous degeneration, yet everywhere either locally excluded the other, the fibromatous existing in immediate association with the venous angiectasis. Hence the inference may be deduced that the excessive development of the connective tissue resulted from an excessive supply and stasis of blood in varicose and valveless veins, and perhaps to that condition was due the difference in the form of the hypertrophy and its invasion of the tissues about the joints. This genetic relationship of venous stasis to connective tissue hyperplasia is more clearly shown in the two next succeeding cases reported by Thomas Smith.¹

CASE IX.—K. R. was born with right lower limb enormously enlarged. The limb maintained the same proportion to the rest of the



FIG. 14

body for a time, and then grew in excess. At the age of nine months she was lively, healthy, and robust. The enlargement extended up to the groin, and, following the line of the crista ilium, extended backwards, involving the right buttock. The comparative measurements

¹ St. Bartholomew's Hosp. Rep., Vol. V., p. 147, 1869.

of the circumference of the limbs, as represented in Fig. 14, were as follows :

	<i>Ankle.</i>	<i>Calf.</i>	<i>Thigh</i>
Left leg.....	4 inches.	5½ inches.	7 inches.
Right leg.....	15 “	13½ “	12½ “

The skin over these parts was thickened, rugose, very dense and hard; here and there studded with fibrous tubercles; and on the leg and foot were a few long and coarse hairs. The foot was masked with thickened integument. The thigh was proportionally smaller than the leg and foot, and was covered with skin softer and extensively stained with a superficial nœvus. Over the buttock the skin was soft and natural, but quaggy in places, and discolored with a few scattered nœvi. The whole limb was warmer than the left, and three inches longer, the increased length being due to thickened integument on the sole of the foot.

After a month's treatment with continuous compression, the child sickened and died.

Autopsy.—Cutis vera deeply marked by transverse dimples, two crossing the thigh, one two inches deep across calf, and one an inch and a half deep across dorsum of foot. Texture of cutis natural over the buttock, uniformly thickened over thigh, and over leg and foot hypertrophied, condensed, and studded with numerous knots and tubercles. Subcutaneous tissue, from two to three inches thick, about the calf and upper part of thigh, and everywhere occupied by a dense, reticulate, spongy, erectile, venous cavernous tissue, which also invaded the intermuscular connective tissue, and extended on the right side within the pelvis and up into the loins behind the right kidney. The reticular and cavernous spaces varied in size, some large enough to receive the end of the thumb. Muscles healthy; abdominal aorta and branches healthy and of normal calibre. Right internal iliac vein enormously enlarged, and at its exit from the pelvis was joined by others of varying dimensions, some very large. At the back of the limb the abnormal system of veins belonged exclusively to the cavernous tissue, which everywhere pervaded the limb, and was supplied through large trunks formed by tributaries from the leg and foot. The nœvi consisted of a spongy, reticulate tissue, containing cavities and interspaces of various size.

CASE X.¹—A girl aged 15, had suffered from birth with an enlarged right thigh and leg, much stained by cavernous nœvous growths. The circumference of the right thigh, leg, and foot was from one to two inches more than corresponding parts of the left, and the temperature of the right was distinctly higher than that of the left. Over outer part of thigh was a large cutaneous nœvus; on the back of the thigh and inner side were large tortuous veins and nœvus growths, and behind the great trochanter were very large venous sinuses, deeply situated.

¹ Smith, St. Bartholomew's Hosp. Rep., Vol. V., p. 150.

Cases 9, 10, and 8 to a less extent, are examples of congenital cavernous angioma,¹ the blood cavities or sinuses being imbedded in layers of connective tissue, and communicating with enlarged, sometimes erratic, and valveless venous trunks. It is also worthy of note that in Cases 9 and 10 the cavernous texture and naevous growths were connected with a system of veins on the posterior aspect of the affected limb which returned its blood through the great sciatic notch. In Case 8 the left lower extremity, in which the venous system was abnormally developed, the enlargement was mainly due to the new formation of the subcutaneous cellular tissue, and in the corresponding member the increased size, though less than in the right limb, consisted of adipose formation, and was unconnected with any abnormality of the venous system. In Case 9 the thickened, indurated, and nodular skin, and immensely increased underlying cellular tissue, were coextensive with "a dense, reticulate, spongy, erectile, venous, cavernous tissue."

In striking contrast with these cases (8, 9 and 10) is the following case of lipomatosis congenita reported by Dr. Rose,² and the succeeding one, now for the first time published.

CASE XI.—The boy was three years old, delicate, and of well-formed family. Below the right axilla was a tumor, larger than a fist, with unchanged integument and indistinct margins. The brachial artery

¹ It is probable that the following case, recently reported by Dr. Paschal, of Chihuahua, Mexico, is a similar development. At the age of nine a small, hard tumor was discovered on the lower and right side of the scalp, which enlarged rapidly, and when first seen by Dr. P. presented the appearance as shown in the accompanying woodcut. It was sparsely covered with hair. A line drawn transversely across the top of the skull marks the commencement of the bag-like structure, which measured from the line of commencement to most dependent portion fifteen inches, transversely from mastoid process to mastoid process twelve inches, and was three inches thick at lowest part. It was abundantly supplied with blood.—*American Medical Bi-Weekly*, Vol. VI., p. 1, 1877.



² Presented to Obst. Soc., Berlin, through the kindness of Dr. Aschoff, *Monatsschrift f. Geburtsk.*, Bd. 29 and 30, 1867.

did not differ from its fellow, and the veins were not dilated. The fourth finger of the right hand was enlarged like a sausage, elongated, and abnormally movable. The last phalanx could be placed without pain upon the metacarpal bone of the thumb, the dorsum of the finger touching the dorsum of the hand. Whilst hyper-extension was thus increased, flexion was absent, for the articular folds were replaced by an adipose cushion of the thickness of a finger. This cushion extended to the end of the finger and made up the elongation. No fat cushion existed upon the dorsum, but it extended along the ulnar up to the elbow, and was directly continuous with the axillary tumor.

CASE XII.—Kate Burns, aged 6 years, now (August, 1876) a patient in the Children's Hospital, D.C., was born with right arm



FIG. 15.

larger and longer than left. The left was amputated near the shoulder-joint several years ago, and consequently no comparative measurements can be made. The skin covering right arm, fingers, axilla, extending behind as far as the scapula, and in front over the pectoralis, is thickened; over the arm it is marked by numerous transverse furrows, which divide it into many folds, as represented in Fig. 15. The hypertrophy is confined to the skin and subcutaneous tissue. The folds are movable, and can be lifted from the subjacent tissues. Power, mobility, and temperature normal. No anomalous distribution of circulatory apparatus discoverable. General nutrition good. The growth of the arm does not appear to be in excess. Continuous compression has been tried, without any apparent benefit.

The child is an epileptic, and is now under treatment, with prospect of complete success.

CASE XII $\frac{1}{2}$.¹—A child, aged twenty months. At birth a tumor, as large as two fists, extended from the lower third of the occipital bone to the spines of the scapulæ. The tumor had diminished to one-fourth, and there were formed five longitudinal folds of skin hanging from the occiput to a transverse ridge parallel with the spines of the scapulæ. The left forearm was thicker than right, also left hand thicker than right. The two calves were thicker and harder than normal. Anomalies confined to skin and subcutaneous tissue.

Cases 4, 5, 6, 8, 9, and 10 apparently demonstrate the genetic connection of augmented venous supply, stasis, and retardation of current with connective-tissue hyperplasia; but there are instances (see Cases 2, 5, 6, 7, and 8), both congenital and acquired, in which the fibromatous and lipomatous degenerations are found occupying separate territories, or in conjoint development, in which case, in addition to the anomalies of the venous system, the tissues affected were interspersed with numerous caverns and cysts filled with a coagulable fluid, and lined with an endothelium, and, occasionally, communicating with cutaneous vesicles, also lined with an endothelium, and containing a similar fluid. Thus the further inference seems deducible, that the two varieties of degeneration owe their origin to separate and distinct alterations of nutrition, and that in the lipomatous form the lymphatic apparatus is primarily and chiefly concerned. In another class of cases the relation of the connective and adipose tissue developments are such as to indicate the subordination of the latter to the former—that is, with increasing connective-tissue hyperplasia and condensation, the adipose accumulations disappear. Various stages of transition of lipomatous into fibromatous developments are found in distinct cases, and sometimes in the same case, as in Bryk's and Steinwirker's cases. Such cases are characterized, when acquired, by inflammatory processes and transudation of fluid from the cutaneous surface, and, in both congenital and acquired forms, by anomalies of the circulatory apparatus, consisting, almost invariably, in dilated, varicose, and superabundant veins. There is another group, characterized by lipomatous formations and obliteration of all vascular systems, to

¹ Jacobi, *Amer. Jour. Obst.*, Vol. IV., p. 719.

which probably Cases 3 and 11 belong, and a fifth class, in which adipose developments exist in immediate association with lymph stasis. Case 1, which constitutes the basis of this inquiry, presents in association several of these conditions. But before proceeding further with this investigation into the histogenesis of these various phenomena, another marked characteristic, which was present in Cases 8, 9, 11, and 12, demands consideration.

The general growth of the child (No. 1) was satisfactory, and the nutrition of the hypertrophied limb was not only sustained, but in excess of the corresponding member, and in this particular the case followed the general law of one class of cases of congenital hypertrophies, affecting either the whole or any part of a limb. Such congenital excesses of growth may extend through the longitudinal and transverse measurements (or either) of the limb, or part of the limb affected, and may involve the osseous structure. The acquired forms of adipose and connective-tissue hypertrophies, so constantly associated with lymphatic teleangiectasis, are not usually connected with an excess of growth of the bony parts through their longitudinal axes.

It thus becomes necessary, in the further prosecution of the inquiry into the nature of the phenomena presented in my own case, to introduce the cases of partial and colossal growths, which, though characterized by the absence of its predominant features, yet contribute important aid, and cannot be excluded from a comprehensive analysis of its complex conditions.

Prof. Busch divides these congenital hypertrophies into two groups.¹ In the first group the affected parts grow in proportion to the rest of the body; in the second group the giant formation is in excess of the development of the rest of the body. My case, so far as regards the hypertrophy, manifestly belongs to the latter group; for in its progressive development the right lower extremity was in excess of the rest of the body. After death the right lower extremity measured one and one-quarter inches longer than the left.

¹ The classification which I have made is not absolutely accurate, because it is not possible in every case to determine the group from the description. When it is not distinctly stated that the growth of the affected part was in excess, the case has been classed with the first group.

First Group.—The abstract of the cases of Klein, Wagner, Wuff, Ideler, and of Legendre have been taken from the paper, entitled "Contributions to the Knowledge of Congenital Hypertrophies of the Extremities," by Prof. W. Busch.¹

CASE XIII.²—The length of the hypertrophic finger of the left hand measured $5\frac{1}{2}$ inches; the third joint was 14 lines, second 1 inch, the first 1 inch thick. Greatest circumference, $4\frac{1}{2}$ inches. The fingers stood in slight ulnar abduction in the articulation of the first and second, and in that of the second and third phalanx, so that it bent over the middle and ring-finger. Motion was good in the metacarpal articulations. The articulation was not normal, as the articular ends of the first phalanx and of the metacarpal bone were much enlarged and malformed.

CASE XIV.³—Right hand of a boy, which enlarged in proportion to the growth of the entire body. In his fifth year a fatty tumor appeared upon the right breast, which extended from the sternum to the axilla, and was followed by the extension of the hypertrophy from the hand to the forearm and arm. The increase in thickness was caused by irregular pads. The thumb was smaller than natural, and separated from the index finger by a fatty tumor. The index finger measured in circumference $6\frac{1}{2}$ inches; the thinner third phalanx stood in hyper-extension. The middle finger measured around first phalanx $13\frac{1}{4}$ inches, and decreased suddenly in its third phalanx. Fourth and fifth were hypertrophic and webbed. Between the fifth and wrist-joint was a fatty tumor. Veins upon dorsum of hand varicose. Pulse equal on both sides. Movements of the hand, which weighed 12 pounds, not impeded.

CASE XV.⁴—A girl, 16 years old. Second toe of left foot twice as long and thick as it should have been. The first and second phalangeal articulation was supplied with a firm and callous ball. The first phalanx was in slight hyper-extension; movements of flexion and extension difficult.

The plantar surface of first and second phalanx covered with a thick layer of fat. Arteries and nerves "showed nothing peculiar." The ligaments were tense, and formed by shining, firm fibres. Articular ends corresponding to the hyper-extension, "somewhat deformed."

CASE XVI.⁵—A man, 32 years old. From birth half of the palm of the three first fingers of the right hand had been deformed by an enormous development of the subcutaneous adipose tissue, which at first grew *pari passu* with the growth of the body, but in later years

¹ Archiv für Klein. Chir., Langenbeck, Vol. VII., p. 174, 1861.

² Von Klein, Von Graefe and Walther's Journal, p. 379.

³ Wagner, Schmit's Jahr., iii., Supplement, 1842, p. 86.

⁴ Bohms, Inaugural Dissertation, Giessen, 1856.

⁵ Wuff, Petersb. Med. Zeitschrift, 1861, No. 10, p. 281.

"increased independently." The articular epiphyses of the metacarpophalangeal articulations were malformed. The metacarpal and phalangeal bones were enlarged transversely. Thumb hyper-extended. Arteries alike on both sides. The weight of the hand rendered it unfit for function.

CASE XVII.¹—The skeleton of a foot preserved in the Berlin Museum. The bones of the three middle toes exceeded in length those of the pollex and little toe (see Fig. 16), both in the phalanges and in the metatarsus, and were thickened.

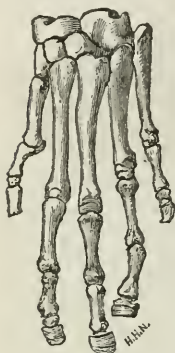


FIG. 16.

The great toe was less developed, and the little toe was rudimentary, forming an appendage to the fourth metatarsal. The toes were in strong dorsal extension. The deformities grew in proportion to the rest of the body, and rendered walking difficult.

CASE XVIII.²—A child, 4 years and six months old. The third and fourth fingers and ulnar half of the volar aspect of the hand hypertrophied, third to the size of an adult. The fingers showed two curvatures—one along the dorsum, the other along the radial side. The last phalanges stood in rectangular hyper-extension. The enlargement was due chiefly to increase of the subcutaneous adipose tissue—a thick elastic cushion, which was on the palmar

surface. The little finger was not increased in length, but thickened by a cushion of fat on the palmar surface. Upon the palm of the metacarpus was a very considerable layer of fat, corresponding to the third and fourth fingers, which was divided from the most of the palm by a well-marked line. Motion in the affected parts was limited.

CASE XIX.³—A boy, aged 12 years. Both feet enlarged. A large lipoma in right gluteal region, and several smaller ones beneath integument of left thigh. Upon both feet (see Fig. 17), as shown upon the left, were large lipomata, both upon the dorsal and plantar surfaces, reaching even beyond the malleoli. The three middle toes were webbed and enlarged.

CASE XX.⁴—Healthy girl, aged 16. The fingers (middle) measured $5\frac{1}{2}$ inches in length, and the same in circumference at base.

CASE XXI.⁵—A boy, aged 10. At birth the second toe of right foot was elongated and thick, and has steadily enlarged, and now measures seven inches in circumference, and projects three inches beyond the other toes. Skin healthy and natural in color. The metatarsal and phalangeal bones were hypertrophied in the same

¹ Busch, loc. cit.

² Legendre, cited by Bohms, loc. cit.

³ Ideler, Inaug. Dis., Berlin, 1855.

⁴ Bigelow, Boston Med. and Surg. Jour., Vol. XLIII., p. 341.

⁵ Hamilton, Buffalo Med. Jour., Vol. VI., pp. 154-5.

relative proportion with the soft parts, and the cellular texture had degenerated into a light-colored fibrous mass, holding in its cellules whitish fat granules. The bleeding vessels were numerous, but only two or three required ligation.



FIG. 17.



FIG. 18.

CASE XXII.¹—A man, native of India. Right foot measured in circumference 9 in., left $15\frac{3}{4}$; length of right big toe $1\frac{1}{2}$ in., left $4\frac{1}{4}$ in.; circumference of right leg, near ankle, $8\frac{1}{2}$ in., left $7\frac{1}{2}$ in.; circumference of left big toe $7\frac{1}{2}$ in., of second and third toes together 8 in., of fourth and fifth $1\frac{1}{8}$ in.; length of second and third toes (united) $3\frac{1}{2}$ inches. (Fig. 18.)

CASE XXIII.²—George P., aged 19. The comparative measurements of the two lower extremities show the excessive development of the right.

	<i>Right.</i>	<i>Left.</i>
Entire length of limb.....	30 inches.	$28\frac{1}{2}$ inches.
Circumference over malleoli.....	10 "	$9\frac{1}{2}$ "
" of calves.....	$13\frac{1}{2}$ "	$13\frac{1}{2}$ "
Junction of middle and lower thirds of thigh.....	$16\frac{1}{2}$ "	$15\frac{1}{2}$ "
Upper third of thigh.....	20 "	19 "
Of nates.....	$13\frac{1}{2}$ "	$11\frac{3}{4}$ "

A large superficial nævus occupied the entire limb, extended up to the last dorsal vertebra, and completely covered one-half of the scrotum.

CASE XXIV.³—A girl, aged 6. The essential change consisted in large, painless, pad-like tumors upon the dorsum of the hand, and upon the dorsal surface of the middle, ring, and little fingers, all four

¹ Simpson, Month. Jour. of Med., Vol. XX., p. 173.

² John Adams, Lon. Lancet, Vol. II., p. 140, 1858.

³ Kappeler, Chir. Beobacht. aus dem Kantonspital Münsterlingen, 1865, 1870, p. 246.

divided by shallow sulci from each other. They were movable in a lateral direction, and were of the consistence of lipoma; were firmly grown together with the tense, foldless, and thinned integument. The pads began at the metacarpo-phalangeal articulation, and passed without interruption and without pressure over the joint between the first and second phalanx to the articulation between the second and third phalanx, and there descended abruptly to the unchanged third phalanx. Upon the volar side of the first and second phalanx of the fingers there were also similar pads, which did not extend over the articulations, but were divided by the articular folds; upon the volar surface of the hand, opposite the heads of the metacarpal bones, another pad was located, which passed without defined limit into the integument.

Right thumb,	4	ctms.,	Left thumb,	4	ctms.
“ index finger,	4½	“	“ index finger,	5	“
“ middle “	5	“	“ middle “	5¾	“
“ ring “	4½	“	“ ring “	5½	“
“ little “	4	“	“ little “	4½	“

The elongated fingers were enlarged in circumference. The bones of the malformed fingers appeared thicker and bulky. Integument

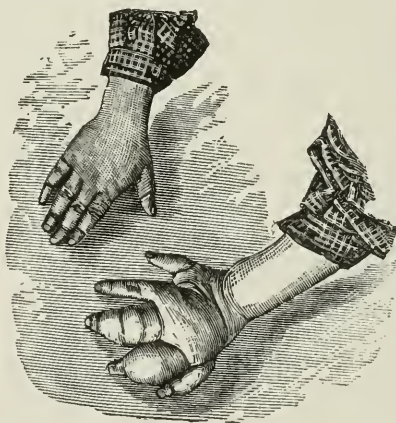


FIG. 19.

was thinned and tense. The enlargement was due chiefly to lipomatous-like tumors located in the subcutaneous cellular tissue, which only interfered with the functions of the parts to a very slight degree; nothing abnormal could be discovered in the circulatory apparatus, though the affected parts felt colder than the corresponding parts, and were much less sensitive.

CASE XXV.¹—Child, aged 15 months. From birth the left leg

¹Gun, Chicago Med. Jour., Vol. XXVI., p. 707, 1869.

was enlarged, and from the fourth to the fifteenth month had doubled in size. The development extended from above the knee to the foot, nearly overlapping the toes, and measured in circumference at its largest part (see Fig. 20) $21\frac{1}{2}$ inches. The skin was smooth, attenu-



FIG. 20.

ated, and pliable. An exploratory puncture gave exit to serum which continued to flow for one hour. A section of the amputated part exhibited hyperplasia of the superficial fascia, the deep fascia and integument being normal.

CASE XXVI.¹—Victor H., aged 7 years and 6 months. The abnormal and congenital development consisted in enlargement of the annular and auricular fingers of the right hand, of the corresponding hypothenar eminence, of the anterior surface of the forearm, and extended markedly in front of the chest of the same side. The right annular finger was quadruple its normal size, curved backwards, and convex on its palmar surface. Voluntary movements completely abolished. Auricular more like a toe than a finger. Its dimension interfered with the movements of the other fingers; semi-flexion was very limited. The bones participate in the enlargement. Sensibility perfect; no perceptible arterial pulsation in affected fingers.

The palmar surface presented a large prominence, feeling like a lipoma, and the swelling on the forearm felt doughy. Fingers removed and examined. The hypertrophy was confined to the cellular adipose tissue and bone; skin was neither thickened nor attached. The fatty tissue was intersected by trabeculae, and the areolae which they circumscribed contained little adipose clusters, which were swollen, and seemed to produce herniae on the walls of the cellules. Tendons atrophied; vessels rudimentary; arteries filiform; veins difficult to find; nerves atrophied; bones lengthened. Temperament lymphatic.

¹ Michel, *Recueil des travaux de la Société Médicale d'Observation de Paris*, Tom. I., p. 319, 1857–58. This is probably the same case submitted to the Society by Guersant. In that case the auricular and annular fingers of the right hand were enlarged, and the palmar surface of the hand presented a large swelling. The child was then between 4 and 5 years of age. *Gazette des Hôpitaux*, No. 116, Oct. 3d, 1857, p. 463. *Société de Chirurgie*, séance, Sept. 23d, 1857.

CASE XXVII.¹—A girl, aged 14. The third and fourth fingers were equally hypertrophic in length, width, and thickness, and to such a degree that the middle finger was one and a-half times the length of the well-formed index. All movements could be executed freely and usefully, and, with the exception of the size, the only abnormality of the fingers was that they assumed a purple color when hanging down.

CASE XXVIII.²—A young man, aged 20, born with hypertrophy of left foot, which principally attacked the first, second, and third

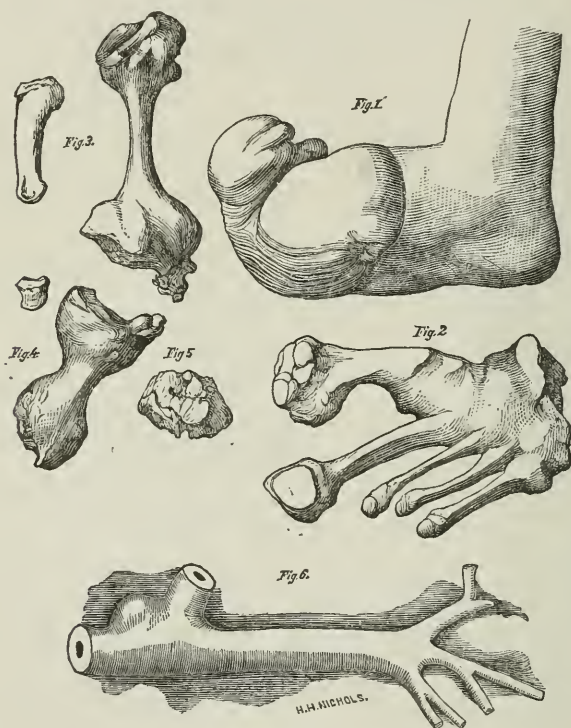


FIG. 21.

toes, of which the two latter were fused into a formless mass. Fourth and fifth normal, but beneath the pad formed by the second and third toes.

The development of the soft parts was due to lipomatous augmentation of the adipose layer, and was principally found in those places

¹ Busch, loc. cit.

² Busch, loc. cit.

where the bones were hypertrophic. The fat development was found upon the dorsal and plantar surfaces of the three first toes, extended on the sole to the os calcis, and on the dorsum overtopped the fourth metatarsal bone. It extended over the tibio-tarsal articulation, above which were several smaller lipomata on the anterior tibial surface. All three toes stood in very strong hyper-extension. On the dorsum of the last articulation (see 1, Fig. 21) of the great toe was a deep furrow, which bi-lobed the mass; one, not so deep, was situated over the metatarso-phalangeal articulation of the fused toes, and another was found over the last articulation. The patient could flex and extend the foot; but the motion was limited, and during it crepitus could be heard. Could not move the toes. The tibiæ were of equal thickness, but of unequal length. The amputated foot exhibited fat intimately grown into the integumentary tissue. In some places the lipoma proper lay immediately beneath the thin skin, at others a thick, steatomatous sward lay between the toes, in which the fat was imbedded in very solid, firm, fibrous layers, and underneath this softer lipomatous tissue. Between the dorsal lipomata, and buried into them, lay a network of colossal veins (see 6, Fig. 21), and at the junction of several branches a large ampulla was found. The enlargement of the veins was due to hypertrophy of their walls; arteries and nerves normal; muscles atrophic and pale, and the bun-



FIG. 22.

dles were pressed asunder by fatty tissue. The articular surface of the first metatarsal bone was divided into three facets (2, anterior view; 5, lateral); 3 and 4 show the 1st and 2d phalanx of the second toe, natural size. The diaphyses of the altered bones were narrow, whilst the epiphyses were tuberos, and covered by irregular osseous projections.

CASE XXIX.¹—M. M., aged 3 years, was a healthy and well-formed child, with the exception of a deformity of the fingers of the left hand. At birth the index and middle fingers were much longer than the others. The fingers were quite useless, and possessed very little free movement. The remaining digits were natural. An examination of the amputated fingers showed that the disease consisted of an hypertrophy of all the tissues. (Fig. 22.)

CASE XXX.²—R. S., aged 16 months. At birth his left hand and arm were larger than the other, and rapidly increased in size. The



FIG. 23.

whole limb, from the shoulder, as shown in Fig. 23, is very much enlarged, chiefly in thickness, although the length also is increased.

The first, second, and third fingers are enormously hypertrophied. The fourth and fifth are of normal size. The metacarpals correspond to their digits, the first three being very large. Both sides of the hand are covered with a thick elastic cushion. The hypertrophy involves all the structures, the great size of all the bones, except of the fourth and fifth fingers, being very evident. The humerus, radius, and ulna are also thicker and rather longer than on the right side, but the enlargement of the arm is chiefly situated in the soft tissues. "The child can use the arm and all the fingers, but he cannot lay hold of anything, and the hand is perfectly useless."

The measurements are as follows:

¹ Annandale, *Malformations of Fingers and Toes*, p. 5.

² MacGillivray, *Australian Med. Jour.*, Vol. XVII., p. 9, 1872.

	<i>Sound.</i>	<i>Hypertrophied.</i>
Acromion to olecranon.....	5 $\frac{1}{4}$	7 $\frac{1}{4}$
Olecranon to wrist.....	4 $\frac{1}{2}$	5
Circumference of arm.....	5 $\frac{1}{2}$	9 $\frac{1}{2}$
Circumference of fore-arm.....	5 $\frac{1}{2}$	8
Wrist to point of index.....	3 $\frac{1}{2}$	6
Circumference of hand.....	4 $\frac{1}{2}$	9 $\frac{1}{2}$

The brachial artery was ligated close to the axilla, which arrested the growth, and subsequently the fingers were amputated. The amputated mass weighed 12 $\frac{1}{2}$ ozs. avoirdupois. The abnormal thickness was mainly subcutaneous fat.

CASE XXXI.¹—Miss —, aged 16, had from birth an enlargement of both great toes, which projected one inch beyond the other toes. She was constantly troubled with irritation and inflammation of the bursal swellings which formed on the toes.

Amandale briefly refers to a case in which the great and second toes were elongated and enlarged. The phalanges and the part of the metatarsus connected with these two toes were very much enlarged.

CASE XXXII.²—The deformity presented the appearance of two great toes; but on dissection of the sole of the foot, it was found that



FIG. 24.

the large toe, which looked at first like a great toe, was really a second toe, in which the three phalanges were hypertrophied and anchylosed together. The hypertrophy was congenital.

¹ Annandale, p. 8.

² Sydney Jones, Lond. Lan., Vol. II., 1864, p. 549.

CASE XXXIII.¹—W. T., aged 19. Index and middle fingers of left hand exceeding corresponding fingers in length one inch. They are also thicker. Circumference of left carpus one inch greater than right. Muscular tissue slightly more developed on left forearm than right. Motion impaired. Integument, panniculus adiposus, muscles and bones, are in equal proportion enlarged and thickened. Veins of left dorsum more developed than of right. Touch and sensation normal. Growth of hand in proportion to that of body. (Fig. 24.)

CASE XXXIV.²—Male, aged 20. Left thoracic cavity some-

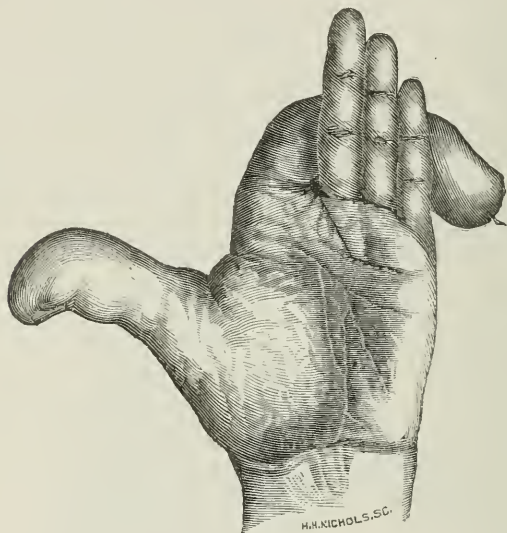


FIG. 25.

what larger than right; left shoulder somewhat larger than right. Deltoid eminence of left side more prominent. Left arm larger, but not longer. Half of hand belonging to thumb and index fingers abnormally enlarged; left carpus larger than right, left metacarpus enormously wide. Position and condition of hypertrophic fingers shown in Fig. 25. Growth not in excess of the body.

The maximum part of the excessive development of the limb in Case 1 consisted in the hypertrophy of the adipose tissue, and certainly the greater, if not the entire part of the excessive length was due to the fat cushion on the plantar surface. In this case, as is usual in congenital giant developments

¹ Ewald, Virch. Archiv, Vol. LVI., p. 421.

² Gruber, Virch. Archiv, Bd. LVI., p. 416.

associated with similar adipose formations, the lipomata are more strikingly exhibited upon the flexion side, differing in this respect from those originating in after-life. They also attack localities which are never selected later in life. There was not in this case any manifest bone-hypertrophy. From the observations cited, it appears that bone-hypertrophy not unfrequently attacks the epiphyses, producing irregular development of the articular ends, which disturbs the normal movements of the joints. In this case the symmetry of the ankle-joint was not disturbed by any bone-malformation, but by the surrounding fat development.

Among the peculiarities which distinguish the congenital giant formations from the acquired forms, Virchow enumerates bone-hypertrophy as an occasional lesion. In the higher grades of these developments, in which the connective tissue is principally involved, bone lesion is quite frequent, and¹ frequently upon section through such diseased parts, from the surface downward to the bone, nothing but a "simple coherent, hard fibrous callosity" is found, which the older authors denominated lardaceous, but which Virchow insists is "nothing but sclerotic connective tissue saturated with clear, expressible serum,² rich in round cells," in which the different former tissues cannot easily be distinguished, being partly destroyed or so intimately grown into one another as to form a single mass, producing atrophy of the enclosed tissues, especially of the muscles and nerves, and consequently paralytic and anæsthetic conditions.

If this process should continue down to the bone, the periosteum becomes implicated, and new layers of bone are produced. In some cases a smooth periosteum may be found; in others it is irregular, wart-like, sometimes presenting "thorn-like formations" of most singular appearance.³ These bone formations

¹ *Onkologie*, Virchow, Vol. I., pp. 311, 312.

² Hendy, Wiedel, and Kaposi insist that it is lymph.

³ In elephantiasis of the leg, the bones appear thickened, and either smooth, but hardened, sclerosed, or irregular on the surface, studded with pointed and tubercular stalactile exostoses, which project into the hypertrophied soft parts, and may be variously amalgamated together. In the midst of the sclerosed parts carious and necrosed spots are occasionally found. Hebra, *Diseases of the Skin*, Vol. III., p. 140, Syd. Soc. transl.

may extend into the extra-periosteal layers and even into the connective-tissue callosities. In the structure of these hypertrophied bones Böhms found nothing abnormal; but Busch asserts that the adipose and medullary tissues of the bones are more strikingly developed than the bone lamella—in fact, the latter may be remarkably thinned. Rokitsky¹ divides bone-hypertrophy into internal and external hyperostosis; in the former the increase proceeds from the “Haversian canals and medullary system;” the bone becomes more compact and the medullary cavity is diminished; in the latter form the breadth and thickness of the bone is augmented by the formation of new layers on the periosteal surface, without diminution of the medullary canal. Both forms, he adds, may occur together, and “each is the result of the gradual formation of too great a quantity of the cartilage of bone, in which the normal salts of bone become deposited.”

The cases numbered from 13 to 34 (both inclusive), do not uniformly exhibit excess of bone development. Some cases (15, 20, 21, 23, 24, 27, 29, 30, 31, and 33) are characterized by increased thickness and elongation of the bones of the affected part, and fibromatous or lipomatous degeneration of the soft parts; in other cases the hypertrophied (14, 18, 19, 25, and 26) or elongated part (11, 13, and 17) is unaccompanied with any alteration of the bone either in thickness or length, and in such cases the excessive enlargement and elongation is owing entirely to lipomatous formations; in a third class of cases bone-hypertrophy without elongation is found in connection with adipose developments. In several instances, in which bone-elongation was combined with bone-hypertrophy, there were also found alterations of the vascular system; in Case 21 numerous “bleeding vessels (probably veins with thickened walls) were found, and the cellular tissue had degenerated into a fibrous mass holding in its cellules whitish fat granules;” in 23 a large “nævus occupied the entire limb;” in Case 27 the hypertrophied fingers became purple when hanging down; and in Case 14, in which the enlargement was due to lipomatous formations, the veins on the dorsum of the hand were varicose. Case 21 is especially interesting, inasmuch as it shows the probable transition of a pre-existing adipose into a fibromatous

¹ Path. Anat., Vol. III., p. 104, American ed., 1855.

degeneration and bone-hypertrophy and elongation, in connection with a superabundant supply of blood. Hyperostosis and increased length are also found in conjunction with augmented arterial supply. This condition is exhibited in the "three cases (35, 36, and 37) of partial hypertrophy of a portion of the organs of voluntary motion," reported by Dr. John Reid.¹

CASE XXXV.—W. C., aged 15. The right upper extremity was proportionate to the size of the lower extremity and to the trunk, while the left was hypertrophied in the hand, forearm, arm, and region of the scapula. The difference was dependent upon the difference of the relative size of the muscles and bone, from the phalanx upwards to the clavicle and scapula, and in various muscles attached to these. The adipose tissue was not increased, but the cellular and cutaneous textures were probably developed uniformly with the muscular and osseous. The skin of the arm presented a number of red patches, one nearly extending over the scapula; the others were located on the outer side of arm and forearm. The whole arterial system of the left superior extremity was enlarged, and the pulsations of the subclavian, the axillary, and all its branches, down to the digital, beat with great strength. The temperature in right hand was 77°, in left 86°, in the right axilla 98°, and in the left 100°. The comparative measurements were as follows:

	<i>Right.</i>	<i>Left.</i>
Circumference of middle arm.....	7 inches.	9 $\frac{1}{10}$ inches.
" an inch below elbow...	7 $\frac{5}{10}$ "	9 $\frac{8}{10}$ "
Wrist.....	5 $\frac{4}{10}$ "	6 $\frac{5}{16}$ "
From inferior angle of scapula to claviculo-scapular articulation.....	6 "	6 $\frac{6}{10}$ "
From inferior angle to middle of spine of scapula.....	5 $\frac{5}{11}$ "	6 "

The movements of extension, pronation, and supination were imperfect and painful.

CASE XXXVI.²—A girl, aged 2 years, healthy. The middle toe of the left foot projected three-fourths of an inch beyond the great, and equalled in bulk all the remaining toes. The phalangeal and metatarsal bones were hypertrophied, and the foot appeared as if the toe of an adult had been transplanted upon the foot of a child. The foot was of great breadth, caused by the increased thickness of the metatarsal bone and interosseous muscles. The dorsal artery of the foot beats with increased force.

CASE XXXVII.³—The thumb of the right hand was one-fourth of an inch longer, and was double in thickness of the corresponding finger, and the index exceeded in length the middle one-half inch. The temperature between the thumb and forefinger was 2° to 6° higher

¹ Lond. and Edin. Month. Jour. of Med. Sci., Vol. III., p. 198.

² Ibid.

³ Ibid.

than the same locality on left hand. The radial artery of the left was double the size of that of the right arm, and felt more distended with each pulsation.

The three preceding cases (35, 36, 37) were all congenital, and probably belong to the second group, in which the growth of the hypertrophied part is in excess of the rest of the body. They are illustrations of increased nutrition, which affects uniformly all the component tissues of the part involved, which were supplied with a redundancy of arterial blood. There are, however, other cases belonging to the same group which do not present the same anatomical relation of the different textures of the parts affected. In the report of the following case of M. Chassaignac,¹ no allusion is made to any alteration of the arterial system, though the surface of the hypertrophied extremities presents a number of venous blotches and varices, which the reporter designates under the name of "*taches érectiles cuticulaires diffuses*."

CASE XXXVIII.—C. L., aged 18. Had scrofulous glandular abscess on the right side of the neck. The two members of left side were those of an individual of ordinary stature, while those of the opposite side seemed to belong to a giant. The different parts of the two last members were not uniformly hypertrophied. The hand was much more so than the arm and forearm; its external half more than the internal; the thumb, index, and middle fingers were relatively much longer and much more voluminous than the two last fingers. The leg and thigh were less voluminous than the foot—this was colossal. The great toe was enormous, but relatively less developed than the four last toes. The man affirmed that he had at least three times as much strength in the enlarged members as in those of the right side.

CASE XXXIX.²—B. D., born with left lower extremity more developed than the other. The skin presented diffused redness with circumscribed bluish spots. The right foot was also enlarged. The growth of the left extremity increased with astonishing rapidity. The child nursed, slept, walked, played, and at the age of three years, when, suddenly crying out, with her hands on her head, she died in a few moments.

CASE XL.³—In a six-year-old Polish Jewess existed general hy-

¹ La Lancette Française, Gaz. des Hopitaux civils et militaires, May 8th, 1858, p. 215. Chirurgical Society, Meeting Apl. 28th, 1858.

² Gherini (de Milan), Bull. de la Société Imperiale de Chirurgie de Paris. 2d Series, Vol. VIII., 1868, p. 350, Meeting Oct. 16th, 1867.

³ Burow, Deutsche Klinik, 1864, No. 24, cited by Busch, loc. cit.

pertrophic development of the second and third toes, and of the respective metatarsal bones. The bones as well as the soft parts were hypertrophic and grew rapidly.

CASE XLI.¹—A young man, aged 19, native of Beaugency, was affected with a general and congenital hypertrophy of the left leg.

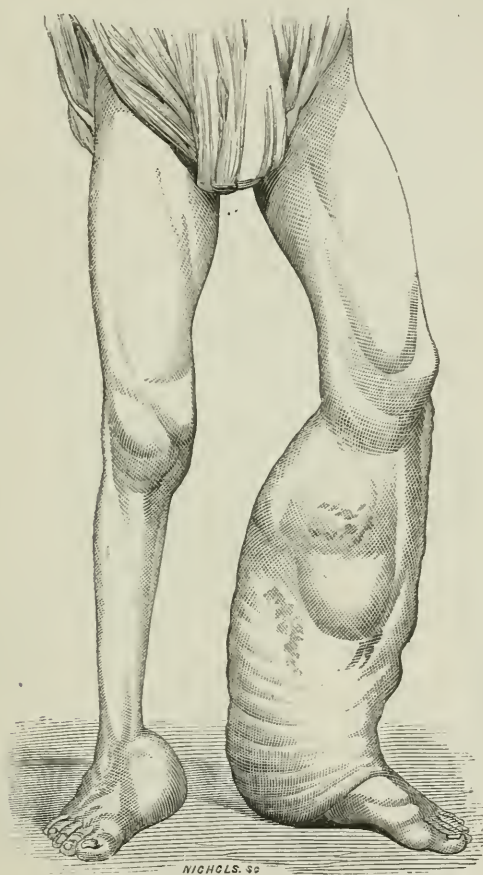


FIG. 26.

The tumefaction was irregular, formed (see Fig. 26), moreover, at the expense of the soft parts, and appearing as an indolent mass attached to the member, which seemed to be formed of flabby tissue, giving to the hand the sensation of little lobules separated by fibrous partitions,

¹ Poulain, *Revue Photographique des Hopitaux de Paris*, 1872, p. 283.

and limited to the subcutaneous cellular tissue, the skin being completely independent of it. The bony portion seemed also involved; the anterior surface of the tibia was one-third larger than the surface of the opposite one, and the bone was lengthened. Above the external malleolus were little varices, and on the plantar surface of the corresponding heel a large tumor. On the body were a number of true lipomata, and the mammæ were enlarged by an increase of fatty tissue. Extension of the tibio-tarsal articulation was limited.

CASE XLII.¹—A girl, aged 12 years, with hypertrophy of the fused second and third toes of the right foot. The fused toes were in hyper-extension in all their articulations, and protruded one inch beyond the other toes.

Examination of the amputated toes showed thickness of the adipose tissue between the skin and bone; on the plantar and dorsal surfaces, arteries, veins, tendons and nerves, normal. Osseous parts, especially the epiphyses, enlarged in all their dimensions.

CASE XLIII.²—A healthy and intelligent girl, born with the index and middle fingers of left hand hypertrophied to three times their normal size. The enlarged middle finger measured eight inches in length, and the same in circumference. The index measured four and a half inches, both in length and circumference. The two fingers were bent in opposite directions (see Fig. 27). On the dorsum of the



FIG. 27.

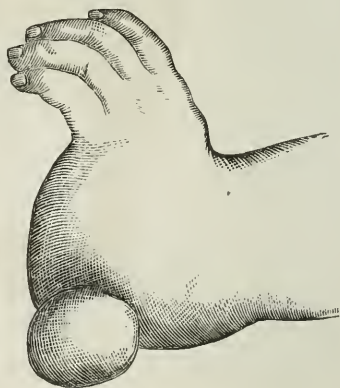


FIG. 28.

metacarpus was a tumor, apparently fat, and on the carpus another. The skin covering the hypertrophied fingers was deep pinkish; temperature and sensibility were normal; motion was imperfect.

¹ Busch, loc. cit.

² Adams, Month. Jour. of Med., Vol. XX., p. 170.

Examination of the amputated mass exhibited hypertrophy of the metacarpal bones, and very great elongation of the three phalanges of the middle finger. The epiphyses were not ossified, the bones were firm, and on longitudinal section exhibited everywhere a vast predominance of adipose structure, which with the hypertrophied and elongated bones, constituted the bulk of the deformed mass.

CASE XLIV.¹—A. T., aged 7 years, was born with an enlarged and distorted right thumb. At one year of age it began to grow and

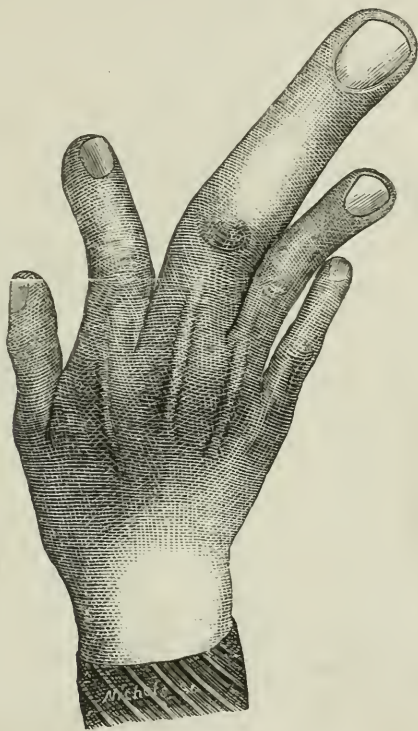


FIG. 29.

increased very rapidly, and the swelling extended to the forearm. The areolar tissue was increased, and the muscles of the arm and forearm were hypertrophied. The humerus, radius, and ulna feel enlarged. (Fig. 28.)

CASE XLV.²—E. H., aged 15. Hypertrophy and elongation of the fore, middle, and ring finger of right hand (see Fig. 29,) and of

¹ Annandale, loc. cit., p. 6. This author furnishes several additional illustrations, but the cases are not reported.

² Curling, *Medico-Chirurg. Trans.*, Vol. XXVIII., p. 337.

the thumb, index and (see Fig. 30) middle fingers of the left. The right middle finger five and a half inches in length, and in circumference four; the left index and middle fingers measured five inches in circumference. All the parts of the hypertrophied fingers were equally developed in excess, the bones, articulations, integuments, and nails. The motions were not destroyed, but greatly impeded. The

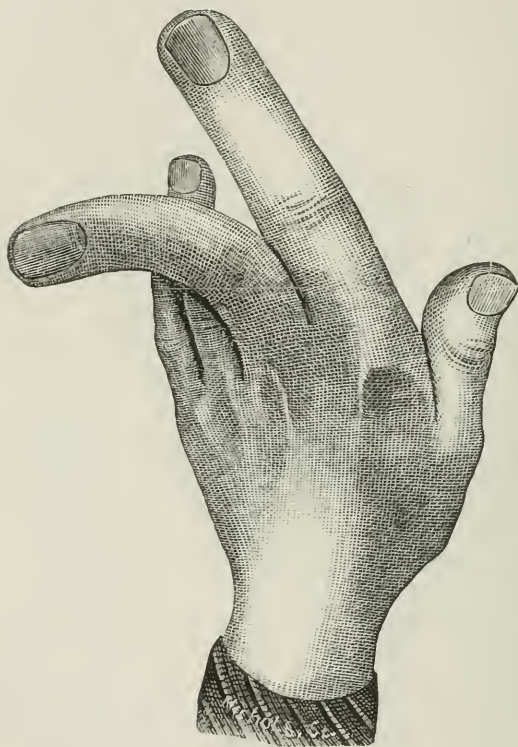


FIG. 30.

fingers were cold, but sensation was not impaired. Pulsation could be detected in the digital arteries, but it was indistinct.

CASE XLVI.¹—A girl, 2 years old. The middle finger of each hand was twice as long, and more than twice as thick as the index fingers.

CASE XLVII.²—A Spaniard, aged 50 years. At birth the first and second fingers of right hand were enormously hypertrophied. He could write and use the hand as if there was nothing unusual about it.

¹Owen, cited by Curling, loc. cit.

²Paget, cited by Curling.

Curling refers to two other cases. The cast of one is to be found in the Museum of King's College, and represents a hypertrophic middle finger; of the other, a cast, showing the hypertrophied second and third toes of a child, had been shown him by Dr. Little.

The foregoing classification of the cases of giant formation is somewhat arbitrary, necessarily rendered so by the incompleteness of the reports, which in many instances contain no allusion to the progressive development of the hypertrophied part. Busch suggests that in the cases in which the hypertrophied part increased in a higher degree than the rest of the body, there was always found "simultaneous lipomatous degeneration of the adipose tissue;" and in those cases in which the "soft parts enlarged *pari passu* with the giant formation of the skeleton, the growth of the part advanced only in proportion to the rest of the body." Neither can be accepted as established laws governing these developments, though in a majority of the cases of each group the enlargement is due principally to excessive fat formations.

The object here is not so much to study the relation which the fatty, fibrous, and osseous developments bear to the comparative development of the affected part to the rest of the body, but to ascertain, if possible, the connection which the arterial, venous, and lymphatic circulation may have with these several forms of hypertrophy. It has been previously suggested that venous stasis stood in direct genetic connection with connective-tissue hyperplasia, and lymph stasis with excessive adipose formations; but only in a few anatomical examinations have the arteries been found normal, and in none have they been found enlarged. In a few living subjects excessive development of the arteries was recognized. Cases 35, 36, 37, and probably 38, 42, and 45, are instances of increased nutrition, due, manifestly, in Cases 35, 36, and 37 to augmented arterial supply; but in Case 42 the arteries and veins were not enlarged, and in Case 45 the pulsations of the digital arteries were so indistinct as to lead to the conclusion that they were inadequate to the ordinary supply of arterial blood. Cases 42 and 45 are curious instances of an hypertrophy affecting equally the skin, nails, muscles, and bones, and yet unaccompanied with any of the circumstances which favor excessive growth.

The patient in Case 44, says Curling, exhibited "a feeble constitution, nutriment was sparing, there was no extraordinary exercise of the part, no enlarged vessels, or activity of circulation," and a diminution of the temperature. In Case 38 power was increased, and in No. 1 and a number of others it remained unimpaired. When power is preserved, the muscles are normal, or at most anæmic; when increased, as in 38, the muscles are hypertrophied—this latter condition being found, presumably, in connection with a superabundant supply of arterial blood and an elevation of temperature. When abolished, or greatly impaired, with or without bone hypertrophy, but not occasioned by bone deformity, the adipose or fibrous degeneration predominates, and atrophy of the muscles, arteries, and nerves has, to a greater or less extent, ensued. The veins seem to offer greater resistance to the atrophic process than the other soft parts. Thus while normal or augmented nutrition, that is, nutrition affecting equally all the parts, follows the general law—one depending upon an adequate, and the other receiving an increased supply of nutritive blood, quantitative or qualitative alterations of nutrition, affecting exclusively the soft parts, or confined to either the adipose or connective tissue, or invading unequally the soft and bony structure, exhibit no uniform condition of the circulatory system. The condition of the arteries shown in Cases 35, 36, 37, 42, and (inferential) in 38, is in marked contrast with the condition found in Cases 39, 41, and 43, in all of which there was bone elongation, but only in the latter instances bone thickness. This fact is, however, insufficient to dissociate augmented arterial supply from bone thickness, for the conditions of bone elongation and thickness are found in simultaneous existence with increased arterial supply.

These observations exhibit great diversity of phenomena and a want of uniformity of anatomical conditions. Enough, however, is shown to establish two facts: 1st. Elongation of a limb, or of a part, may be due either to increased length of the bones, or to the formation of fat cushions on the plantar surface of the foot, or at the ends of the fingers or toes, or both conditions may be concerned in producing the increased length. 2d. Bone thickness is most frequently found in connection with connective-tissue hyperplasia, and even when not invading the dia-

physis, the epiphysis were nearly always thickened. Lipomatous formations may co-exist upon the flexor and extensor sides, but most usually they attack the flexor aspect, and frequently select localities never invaded by the acquired forms. In my case (No. 1) the elongation of the limb was due to the fat formation on the plantar surface—an additional reason why it should be classed with the cases which develop in excess of the rest of the body.

(To be continued.)

NOTE ON THE NORMAL ANATOMY OF THE VULVO-VAGINAL ORIFICE.

BY

H. OTIS HYATT, M.D.,
Kinston, N. C.

(With one woodcut.)

IN the last number of this JOURNAL, Dr. Edward B. Turnipseed, of Columbia, S. C., has an article entitled "Some Facts in Regard to the Anatomical Difference between the Negro and White Races." The doctor commences his article by quoting the following from the May number of the *Richmond and Louisville Journal* for 1868: "I am not aware that it is generally known to the scientific world that the hymen of the negro woman is not at the entrance of the vagina as in the white woman, but from one and a half to two inches from its entrance in the interior, with an opening below for the passage of the menses. I have examined a great many cases, and have found this invariable," etc., etc. "I have concluded that this may be one of the anatomical marks of the non-unity of the races," etc., etc.

He then proceeds to give us the details of eight cases to prove the correctness of his assertion, and concludes by saying that, "Although more than eight years have elapsed since I published this anatomical difference in the races, and the journalists have called upon their readers for further information, yet up to this time there has been no refutation; therefore, I conclude that the profession have accepted the truths as herein stated, as well as my claims of first pointing them out."

To those who have had much gynecological work to do for negroes, I need not say that the doctor has fallen into an error. I have during the last eight years examined one thousand negro women for diseases of the sexual organs, and have never seen any marked difference between the vulva and vagina of negroes and that of whites, with the solitary exception that the labia minora or nymphæ of negroes are generally larger and more prominent than those of white women.

I can very well see how Dr. Turnipseed could have fallen into this error, especially if he consulted the ordinary books on anatomy, which, as every gynecologist knows, are singularly defective in this respect. They are so much so, that Dr. Matthews Duncan, in some remarks delivered before the Obstetrical Society of Edinburgh, Jan. 26, 1876, which were published in the April number of the *Obstetrical Journal of Great Britain and Ireland* for 1876, saw fit to use the following language: "Errors in the common descriptive anatomy of the vulva are so common, even in books of the highest repute, that, were it for no other reason, it would be necessary here to give an account of it so far as my present subject demands, and in doing so the errors referred to will be made plain enough." (He is speaking of the inevitable laceration of the ostium vaginæ of primiparæ.)

"In the primipara, and it is her exclusively we describe, the orifice of the vagina is easily made out by observing the hymen as it presents more or less injured by sexual connection. The outer or lower margin of the hymen, or its margin of insertion, is the exact limit of the vagina, the margin of the vaginal orifice. Close to the upper or anterior margin is the orifice of the urethra. At the sides of the orifice are the lower ends of the nymphæ, but there is quite a considerable distance between them and the vaginal orifice. Remote from the nymphæ and closely adjoining the posterior margin of the vaginal orifice are the openings of the glands of Duverney, or Cowper. These openings are in the fossa navicularis. This is a boat-shaped cavity lying between the orifice of the vagina and fourchette, or anterior marginal portion of the perineum. This cavity has really no shape, or rather it has that given it when it is examined by separating the labia majora. Then it is boat-shaped or navicular, and is large enough to admit the point of the little finger

The labia majora are not united posteriorly. They form separate piers parallel and touching one another, and end somewhat abruptly, their points looking posteriorly. They are connected by the perineum which forms their posterior commissure, and whose anterior margin is called frenulum, or more frequently fourchette. The perineum is described as extending from the fourchette to the anus, and has a central raphé."

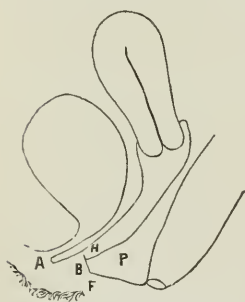
The foregoing description of the vulva, though better than what is generally found in text-books on anatomy and gynecology, is yet defective in two very important particulars. Dr. Duncan says that close to the upper or anterior orifice (of the vagina) is the urethra, leaving one to suppose that he meant the orifice of the urethra, but such is not the case. The meatus urinarius in the majority of subjects is at least one-half, and is often three-quarters of an inch anterior to the ostium vaginae. If a virgin with the hymen intact is placed upon her back, and the labia majora and nymphae gently separated, the hymen will be seen to rise up against the anterior portion of that part of the ostium vaginae which is traversed by the urethra, and is almost always one-half or three-quarters of an inch distant from the meatus urinarius, which leaves at least one-half of the urethra outside or external to the vagina. The hymen, which separates the vagina from the vulva, is invariably situated within the grasp of the sphincter vaginae muscle, and is distant posteriorly from the fourchette or frenulum generally from a quarter to half an inch. The intermediate space is occupied by the fossa navicularis. The space between the fourchette and the hymen is liable to great variations, being greater in fleshy subjects than in lean ones. In first labors the ostium vaginae is almost invariably ruptured, which destroys the distinctive mark where the vagina ends and the vulva commences. Or, in other words, the posterior or lower portion of the vaginal wall and vulva are made continuous.

In Cases IV. and VI. Dr. Turnipseed speaks of the hymen of girls eight and nine years old. Scanzoni, in the fourth American edition of his work on diseases of the female sexual organs, page 555, says: "The hymen, as is known, is completely absent in the embryo; in the new-born child it forms but a minute fold of mucous membrane, which is insensibly elevated until the age of puberty." If I were disposed to dis-

pute with such high authority in regard to the development of the hymen, my observation is not yet sufficiently extensive to warrant me in giving a positive opinion; nevertheless, from the appearance of the sexual apparatus of the dozen or two girls whom I have examined prior to puberty, I am led to entertain the belief that the hymen does not commence to form until puberty commences. This little fold of mucous membrane, which is elevated just the least bit from the surrounding parts, simply marks the place where the hymen will be when the sexual organs attain mature development.

Dr. Turnipseed, when taking his measurements, has probably fallen into the pardonable error of considering everything posterior to the meatus urinarius as vagina, and no doubt took his measurements from this point to the edge of the hymen. Another point which is liable to mislead is the description generally given of the perineal body by

gynecological authors. They either through carelessness or for the sake of convenience describe this body as being triangular in shape, which it becomes only after the ostium vaginæ has been ruptured; but prior to such rupture it is really four-sided. The accompanying diagram will serve to illustrate it, also the relative size and position of the vagina and vulva.



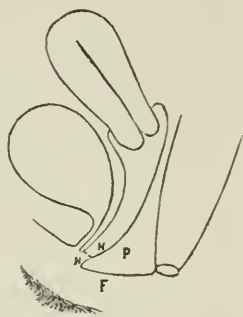
- A. Meatus urinarius.
- B. Fossa navicularis.
- F. Fourchette.
- H. Hymen.
- P. Perineum.

I have written the above, not for the purpose of teaching any one anatomy, but simply to show how easily Dr.

Turnipseed could be mistaken in what he regards as the discovery of an anatomical peculiarity. It certainly has never been my lot to see any marked difference between the sexual organs of the two races, and I have done a good deal of gynecological work for both, and usually exercise ordinary care in the examination of my cases.

[NOTE.—Since the reception of Dr. Hyatt's paper, we have been studying the normal anatomy of the vulvo-vaginal orifice in a number of cases, in virgins and nulliparæ as well as in multiparæ, and have

come to the conclusion that he also is in error when he pronounces the perineal body to be as a rule four-sided prior to the rupture of the ostium vaginæ during parturition. Of all the cases, numbering fully one hundred, ocularly examined by us to determine this question, in virgins and nulliparæ the vulvo-vaginal orifice presented the appearance indicated in the accompanying diagram, viz.: a triangular perineal body (as usually described), the superior anterior angle of which projects beyond the hymen or its remnants to the extent of $\frac{1}{2}$ to $\frac{3}{4}$ inch, such projection forming the more or less shallow fossa navicularis. The projection of the meatus urinarius beyond the hymen, mentioned by Dr. Hyatt, could not be verified in any of our cases; the hymeneal circle or semi-circle was invariably found to be exactly on a line with the external orifice of the urethra, the latter opening being frequently buried in the folds of the hymen, when they met beneath the pubis. In one case the hymeneal folds even projected beyond and overlapped the meatus, so as almost to hide it from view. In the erect posture the



P. Perineum.
H. Hymen.
N. Fossa navicularis.
F. Fourchette.

normal inclination of the pelvis, equal to 60° , the sacral promontory standing then some 3" above the superior border of the pubis, will naturally cause the meatus urinarius to project slightly beyond the vaginal orifice, a provision which permits urination to be accomplished without soiling the parts beneath. The position usually chosen by the female sex for the performance of that function proves that statement. But this projection of the meatus urinarius is only apparent; on resuming the dorsal decubitus the pelvic inclination disappears, and the urinary and vaginal orifices are again on the same level. Hyrtl (*Anatomy*, 1853) says: "The female urethra opens in the space between the nymphæ (atrium or vestibulum vaginæ or pronaus), $\frac{1}{4}$ to $\frac{1}{2}$ " below the clitoris, and immediately above the vaginal orifice, by a round nodular opening," etc. Hyrtl's statement therefore agrees with that of Duncan.—In two cases only, both married nulliparæ, did we find the condition described by Dr. Hyatt, that is, a four-sided perineal body, the membranous fold comprising the anterior superior angle of the perineal body and known as the fourchette being absent, and the fossa navicularis forming but a shallow depression, or inclined plane, corresponding to the fourth side of the quadrilateral in Dr. H.'s diagram. This condition we look upon as defective development, not as the normal state. In multiparæ, in whom the perineal body itself was intact (where it was lacerated, of course, no proper observation could be made), the same triangular perineal body was found, but both hymen and fourchette being destroyed, the fossa navicularis also had disappeared, and with it the resemblance to a fourth side described above.

No doubt a great diversity exists in the minor anatomy of the female vulva, which accounts for the discrepancy in the various descriptions, but we agree with Dr. Hyatt in believing that this subject should be more carefully studied, and a uniform standard adopted, particularly as regards the above mooted points.—ED.]

SOME CORROBORATIVE FACTS IN REGARD TO THE ANATOMICAL DIFFERENCE BETWEEN THE NEGRO AND WHITE RACES.

BY

C. H. FORT, M.D.,

Adams Station, Tennessee.

IN a foot-note to the second article of Dr. E. B. Turnipseed, on the difference in the location of the hymen in the white and negro races, which appeared in the January number of this JOURNAL (Dr. Turnipseed's first article on this subject appeared in another journal a few years ago), the editor says he hopes that Dr. T.'s communication will call forth some facts throwing more light upon the subject of this anatomical feature of the negro race, and with the hope of so doing I write this article, the last article of Dr. T.'s being the first I have ever seen in print upon this subject. Several years since, after operating on two cases, both negresses, for misplaced hymen, as I then thought, I was induced to ask an old obstetrician if he ever had any such cases to contend with in the white race. He said he did not, but supposed that such did exist in the white race, but that the extra modesty of the white race kept such "*deformities*" a secret. Since then I have operated on three more, and I give a history of each case as best I can from my books and memory.

CASE I.—A negro girl, fifteen years old, very well developed; had always had some trouble every month since her catamenia first started. I had been treating her some time for her amenorrhœal troubles with tonics and emmenagogues without any perceptible benefit. At each endeavor of nature to establish her catamenial periods she would have severe hysterical attacks. Becoming wearied with the case I undertook to make a digital examination, but not being able to force my finger in more than one and a half inches, I

sent for my speculum, and upon examination I found the hymen dense and firm, with a small opening close to the posterior wall of the vagina, which I could not detect with my finger, just large enough to admit a Simpson's sound. Introducing a grooved director, I split the hymen open with a bistoury, which operation resulted in an entire cessation of her troubles.

CASE II.—A negro girl, sixteen years old, of a strumous diathesis, small in stature, poorly developed, consulted me in regard to a fistulous opening in the right inguinal region, of some duration. In endeavoring to find out the extent of tissues involved, I endeavored to make a digital exploration, but was stopped by the hymen about two inches within the vulva. I inserted my Sims' speculum, and after putting the hymen on the stretch, I pencilled around the hymen several times freely with the stick of nitrate of silver. On examining the parts a week after I found the hymen gone.

CASE III.—Negro girl (mulatto), eighteen years old, of excellent moral habits. I found her suffering from an attack of locomotor ataxia. She also had been troubled with dysmenorrhœa for some time. On examining with the speculum I found the hymen one inch from the vulva. With a pair of curved scissors I cut the membrane to the junction of the anterior vaginal wall. She finally died of locomotor ataxia.

CASE IV.—Negro woman, eighteen years old; had been married only a short time. Her husband, finding sexual congress very painful to his wife and but imperfectly accomplished, consulted me. I found the hymen, about two inches within the vulva, very red and inflamed. I first cauterized it with carbolic acid and then split it open. There was no more trouble.

CASE V.—Mulatto girl, fourteen years old; very well developed. I found the hymen one inch from the vulva, with an opening of about the size of an English pea. I split it open and at once relieved all trouble.

CASE VI.—Negro girl, five years old. Hymen one-half inch from the vulva.

I could give a few more such cases, but I am satisfied from actual observation that every hymen I have ever seen or examined in the negro or mulatto is placed farther within the vagina than any I ever saw or examined in the white race, and as soon as I saw Dr. Turnipseed's article above referred to I was convinced that it is an anatomical peculiarity of the negro race; so much so, indeed, that I sincerely believe that this peculiarity, and the apparently greater density of the hymen in the negress, would enable any practised physician to distinguish the negro from the white race, even in the dark, by the aid of touch alone.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Reported by MATTHEW D. MANN, M.D., Secretary.¹

Stated Meeting, November 21, 1876.

The President, DR. T. G. THOMAS, in the Chair.

DR. THOMAS reported a case of

FATAL OVARIOTOMY APPARENTLY CONSEQUENT ON THE SUDDEN ESCAPE OF A SMALL AMOUNT OF BLOOD INTO THE PERI- TONEAL CAVITY.

Miss —, aged eighteen years; first noticed the tumor eighteen months ago. At the time of the operation—three weeks ago—she was emaciated and had a slight hectic. The operation was of the simplest kind. The tumor was small, a monocyte, and was removed through a very small opening.

Not one drop of fluid of any kind was allowed to escape into the peritoneal cavity, and as there was no hemorrhage, not half an ounce of blood having been lost, no sponges were introduced for cleansing purposes. Only one finger was introduced for drawing up and inspecting the right ovary. The pedicle, which was long, was secured by a clamp, and the wound closed completely.

The prognosis was extremely favorable, and the patient did well until the beginning of the third day, the temperature remaining below 101.5° . Early on the morning of the third day the temperature was 103° , but there were no bad symptoms, and the temperature the next morning was only 102.5° ; pulse 128. About noon both pulse and temperature began to go up, and soon the patient was in a state of collapse. There seeming to be no absorption of stimulants by the stomach, hypodermics of brandy were used, but had little effect. Dr. Thomas saw her soon after noon, when the pulse was 148, and temperature $103\frac{3}{4}^{\circ}$. He was much puzzled to know the cause

¹ In the report of the list of officers elected at the annual meeting, Oct. 17, 1876, mention was accidentally omitted of the fact that Dr. James B. Hunter was first elected Secretary. On his declining the position, at the next meeting Dr. Mann was elected to fill the vacancy.

of the sudden collapse. There were no signs of peritonitis, the abdomen was remarkably flat, nor were there any signs of septicaemia. The symptoms impressed him strongly with the idea that there was some fluid in the peritoneal cavity; and so strong was this idea that he removed a stitch, the wound being firmly united, introduced a catheter deep into Douglas's cul-de-sac, but was unable to withdraw anything. The patient died at 3.30 P.M., the temperature being $104\frac{3}{4}^{\circ}$.

DR. MAXWELL, Pathologist to the Woman's Hospital, made the following report on the post-mortem appearances:

"*Autopsy*, twelve hours after death.—Body well nourished; rigor mortis; tympanites; skin normal.

"*Abdominal wound*.—Small opening above the pedicle made by the surgeon before death; otherwise the edges of the wound were nicely agglutinated. Portion surrounding the pedicle normal, excepting a small streak on the left side, which was discolored from hemorrhage, which had occurred probably at the time of the operation. At the peritoneal edges of the wound, and extending from half an inch to an inch outward, on each side, were evidences of peritonitis (incipient).

"*Peritoneal cavity*.—Generally moderately marked congestion of the smaller vessels. On the internal surface of the left broad ligament, two inches from its uterine attachment, was a sub-peritoneal hemorrhage one inch by one and a half by two-twelfths inches; on either side of the posterior surface of the bladder was a smaller spot. A loop of ileum near the ileo-caecal valve, which dropped into the pelvic cavity, was intensely congested. At this point along the intestine were several little fringes, apparently thin filaments, which had been attached to the tumor; these were black from congestion. Similar points were found in the anterior abdominal wall, chiefly on the right side and on the posterior layer of peritoneum in the right lumbar region. On the upper convexity of the sigmoid flexure an oval spot, one inch in longest diameter, was agglutinated to the pedicle close to its point of emergence from the abdominal wound. A few flakes of fibrinous exudation were seen at this spot. Douglas's cul-de-sac held about 3 iss. of visceral blood.

"*Uterus and appendages*.—The uterus was drawn by the pedicle to an angle of forty-five degrees with the axis of the body. The left ovary was removed. The portions included in the clamp were perfectly normal on the proximal side. The outer two-thirds of the right Fallopian tube were dilated to about two or three times its normal calibre, and intensely congested, almost black. Its fimbriated extremity was spread out upon the ovary, and was bathed in the blood, as was also the surface

of the ovary. The same could be squeezed from the canal of the tube, and was of the same appearance as the blood found in the cul-de-sac, and was its probable source.

"The ovary contained on its upper edge fine cysts, one of them $\frac{1}{2}$ " in diameter. The body was filled with cysts containing a dark-colored bloody fluid. The uterus was of a decidedly infantile type, the cervix constituting fully one-half its entire length. The lining membrane was pinkish and swollen, and in the cornua stained with the same fluid found in the tube. The vagina contained clots of the same dark-colored fluid noted above, and the vulva and external parts were also stained thereby."

DR. THOMAS asked whether this 3 iss. of menstrual blood effused into the peritoneal cavity under these circumstances, sufficed to destroy life. For himself he was not satisfied with this explanation, as it did not seem possible that so small an amount could cause death.

DR. LUSK remarked that in hæmatocele, where there is a sudden effusion of blood into the peritoneal cavity, we do not have death as a result.

DR. WARD remarked that Dr. Noeggerath had reported a case some years before, where there was salpingitis with the formation of a small cyst. The rupture of this cyst allowed a small amount of fluid to escape into the peritoneal cavity, and was followed by collapse and death.

DR. NICOLL asked why the effusion of so small an amount of blood should cause the sudden and great rise of temperature. Some disease of other organs might have been the cause of death.

DR. THOMAS said that the other organs were not examined, because no lesions of them had been suspected, and because the friends objected to a complete examination.

DR. PEASLEE believed that if blood was the cause of death it could only act in two ways, either by acting as an irritant producing an irritation which would go on to peritonitis, or by becoming decomposed and producing septicæmia. He had often seen a bloody flow from the uterus after ovariectomy, and considered it rather a good sign. He did not call it menstruation. In this case he did not think the blood could be considered an important factor in causing death, as there was no proof that it had undergone decomposition.

DR. THOMAS said that he had met with a case similar to the one which occurred to Dr. Noeggerath. After removal by the galvano-cautery of a clitoris for syphilitic enlargement, the patient, who had done well and was up, suddenly died in collapse on the ninth day. It was found that the Fallopian tube

was as large as a hen's egg, and that pus dribbled through from the fimbriated extremity.

DR. PEASLEE remarked that both this case and Dr. Noeggerath's came under a different category. The patients both died of the shock well known to follow the effusion of pus into the peritoneal cavity.

As bearing upon the cause of death in this case, DR. THOMAS mentioned a case which happened in the Stranger's Hospital, from the case-book of which the history was copied:

"A. E. F., æt. 53, was operated on for ovarian tumor, May 11, 1871.—The cyst was covered with a loose envelope of peritoneum, from which the cyst was enucleated, the envelope being carefully swabbed out. Some hemorrhage persisting, however, the envelope was gathered together like the mouth of a sac, and secured by a silk ligature, and the wound closed.

"May 13.—Temperature 102°, pulse 120. Stitches were removed, but there was no firm union, and the intestines burst out.

"May 16.—Again there was found to be no union of the wound.

"May 17.—Not so well; the parotids swollen and painful.

"May 18.—Patient delirious and furibund; requires to be held in bed. Gave $\frac{3}{4}$ grain morphine to quiet her.

"May 21.—Patient improving. Temperature has never been above 102°.

"May 22, A.M.—Patient doing well; pulse 120, temperature 99°. At 1 o'clock the patient became excited and raised herself in bed. Soon after she complained of pain in the abdomen, and when seen at 2 P.M., was in a state of collapse. Died at 3.30 P.M.

"*Post-mortem.*—On opening the abdomen the wound was found to be still ununited. Evidences of adhesive inflammation, however, were found on each side of the wound for four inches, gluing the intestines to the abdominal walls. No evidence of general inflammation. The fold of peritoneum which had enclosed the cyst was found closed at its upper border by a silk thread. The whole fissure composing this sac was in a state of gangrene, and its cavity filled by a dark, inky, offensive fluid, some of which (say one pint) was found free in the abdominal cavity. The other organs of the cavity were normal."

DR. THOMAS had seen two other cases where a sudden effusion of fluid into the abdominal cavity had been followed by dangerous symptoms. One was a case where there was intra-uterine catarrh and subinvolution of the uterus, with a large patulous os. The patient was taking an injection with a Davidson's syringe. The symptoms were not those of uterine colic,

but there was great pain and collapse. This was followed by an attack of pelvic peritonitis, from which the patient recovered. The fluid, probably blood, was forced back through a dilated tube.

The other case was the result of an intra-uterine injection. Ten drops of a mixture of equal parts of ferri-sulphas and glycerine were injected into the uterine cavity, and agonizing pain immediately supervened. The pulse first ran up, and then the patient collapsed. A slight attack of pelvic peritonitis followed, but ended in recovery.

Hildebrandt also reports a case where he injected a few drops of sulphate of iron, and the patient died of collapse. The tube was found dilated and covered with iron, which was also apparent in the peritoneal cavity. Notwithstanding these cases, Dr. Thomas did not think that his case of ovariectomy was killed by the blood in the peritoneal cavity. Her general condition was bad, she had undergone a severe operation, and her peritoneal cavity had been opened, and in all these respects she differed from patients rallying from the shock of hæmatocele.

DR. PEASLEE thought that the patient might have had incipient peritonitis. If she had lived twenty-four hours she would have had fully-developed inflammation. She died of shock and peritonitis. He had seen three cases of incipient peritonitis. This principle was not sufficiently recognized.

DR. THOMAS remarked that the cases, reported by Clay, of death from shock a number of days after the operation, might be explained in this way.

DR. JACOBI made some remarks on the action of electrolysis in the removal of tumors. The current acts in three ways: 1st, by contracting the arteries, if applied longer it dilates them; 2d, it decomposes liquids and salts; 3d, it has a caustic effect. On the tumor it acts by decomposition. As was seen in one case, the positive pole was rusty, and suppuration occurred, due to causes which might have been avoided. When the positive pole is put into the tumor dry gangrene takes place, and near the negative pole moist gangrene. Only the negative pole does the injury, so it is much less dangerous to introduce the positive pole only.

DR. HENRY D. NICOLL reported a

CASE OF INCISION OF THE CERVIX, WITH DEATH ON THE FIFTEENTH DAY.

The patient was thirty-five years of age, and had had one child fourteen years before. She had retroversion, and a marked stenosis of the os internum. The obstruction was band-like.

She had never had pelvic peritonitis. He operated on account of sterility. He incised both sides, most deeply on the right, where the incision went one-half through the uterine wall. On the seventh day after he passed a sound, and found that the uterus could be moved about freely without pain. She expected to menstruate on the ninth day. On the tenth day she sent for the doctor. She complained of some pain in walking. Menstruation had come on the day previously, but had stopped, and she thought she must have taken cold. A vaginal examination showed the vagina to be hot, about 100° , and the uterus bound down. Slight incipient pelvic peritonitis. For two days the condition remained the same. On the twelfth day after the operation, the doctor was sent for at four A.M., and found the patient in a state of collapse, with great pain in the abdomen, and a temperature of 105.5° , and tympanites. A vaginal examination revealed nothing new. There was dulness on percussion about 3" above the symphysis, as from a distended bladder. The temperature went up to 108.2° , and she died at six P.M. The autopsy showed the intestines injected and surrounded by lymph. In the pelvic cavity there was about $\frac{3}{4}$ i. of pus. To the right of the womb there was an open abscess, and to the side of this another holding $\frac{3}{4}$ vi., not burst, and to the left of this one, again, a small one containing 3 ij. The pelvic tissues were all adherent. The wound in the uterus was open and perfectly healthy. Dr. Nicoll thought that exposure to cold was the cause of suppuration.

DR. THOMAS thought it to be of great importance to get the fatal cases of this operation, as he was sure there were a great many of them. He himself had seen two deaths therefrom.

DR. LEE said that he had heard incidentally that this patient had arisen much sooner than Dr. Nicoll supposed.

DR. JACOB said that getting up could have but little to do with it. The cause of death was probably phlebitis, or lymphangitis. This affection progresses slowly; does not show itself for a week, and may be due to some epidemic influence. If the operation should prove so fatal in favorable cases it should be abandoned.

DR. PEASLEE said that he considered it dangerous to cut into the substance of the uterus. He had seen phlebitis coming on slowly, and then an abscess burst suddenly. In one case he had passed the sound ten times or so, and one day, as a result, he had a phlebitis. An abscess formed; this was opened, and the patient did well and went home. He learned soon after that the abscess had been allowed to close, had refilled and burst into the peritoneal cavity, causing the death of the patient.

Stated Meeting, Dec. 5, 1876.

The President, DR. T. G. THOMAS, in the Chair.

DR. NOEGGERATH presented a

SPECIMEN OF A UTERUS, WITH APPENDAGES AND KIDNEYS, FROM A WOMAN WHO HAD DIED OF CANCER, IN WHOM THE CERVIX HAD BEEN AMPUTATED BY GALVANO-CAUTERY SEVEN MONTHS PREVIOUSLY.

The posterior lip of the cervix was removed for cancer, on the 28th of April last, by the galvano-cantery. Owing to the impossibility of passing a wire around the mass, a cantery-knife was used. The patient recovered in two weeks. On September 15th, she experienced a severe pain in the left ovarian region. An examination showed a hard mass in the left side of the pelvis, and enlarged inguinal glands. Early in October, the pain left her, and the swelling in the left side disappeared, but a similar condition appeared on the right side. This appeared to favor the diagnosis of migrating cellulitis. Soon after the urine became scanty, and for eighteen days and sixteen hours (from November 3d to 22d) she did not pass a single drop. Careful examination failed to show a sacculated bladder or hydronephrosis. The urea was eliminated by the stomach; she vomited a fluid which had the smell, color, and appearance of urine, and which was found to contain urea. Anasarca finally set in; she had two convulsions; cedema of the lungs supervened, and death ensued.

The *autopsy* showed the kidneys somewhat enlarged and congested. The ureters were pressed upon by enlarged glands, and contained about 3 i. of urine above the point of occlusion. The ovaries were bound down very closely to the uterus. There had been some perimetritis. The exciting cause of death was reflex paralysis of the kidneys, probably through pressure on the ureters. The vaginal portion of the cervix showed no sign of the cantery operation; it was soft throughout, and the membrane which covered the posterior lip seemed to be a perfect reproduction of the normal mucous membrane.

Dr. Noeggerath remarked that it is claimed that after these amputations with the cantery cicatricial contraction of the os was sure to occur. Here was a case where no contraction was seen to follow the operation after six months, the os remaining soft, large, and patulous.

FIBROUS POLYPUS SIMULATING INVERSION.

DR. THOMAS presented a fibrous polypus which had been removed by the *écraseur*. The patient had been a large, strong

woman, weighing nearly two hundred pounds, but for more than a year she had been losing blood very profusely, till she was in a very low and debilitated condition. An examination was made, and a tumor found in the vagina the size and shape of an inverted uterus. There was a gutter around the whole tumor at the external os, and no entrance could be found into the cervical canal.

The results of external examination were unsatisfactory, and two fingers introduced into the rectum could not reach the ring, which would have proved it to be an inverted uterus. She was too weak to bear an anæsthetic, and therefore the whole hand could not be passed into the rectum.

She was therefore put upon tonics and restoratives, and her general condition much improved. Ether was then given, and the uterus distinctly felt both through the abdominal walls and the rectum. This case shows the advantage of an anæsthetic as an aid to diagnosis. After the diagnosis was made, an opening was forced at what appeared to be the weakest point, and a sound passed. After the removal of the tumor by the galvanic loop, it was seen that only the capsule of the tumor had been cut through, the tumor itself appearing quite untouched through the circular opening made by the wire. The capsule was easily separable throughout.

Dr. Thomas remarked that he had seen four such cases, where adhesions had formed at the external os between the tumor and the cervix, a condition which was very apt to mislead. One of these cases he had seen with Dr. John Byrne.

Dr. BYRNE remarked that in his case there was another complication; the tumor was first seen five days after delivery.

Dr. JOHN E. BLAKE read the following remarks on

CONDENSED MILK AS A DIET FOR YOUNG INFANTS, WHERE A SUBSTITUTE FOR BREAST-MILK IS NEEDED.

"While not pretending to offer upon this subject anything meriting the title of a paper, I will as briefly as possible state the views entertained upon it by many, desiring thereupon the opinions of the members of the Society, and I will add, in this connection, that it seems to me that questions as to the proper dietetics of children are second to none in practical importance.

Dr. B. F. Dawson, in his admirable paper on 'The Relation between Alimentation and the Gastro-Intestinal Diseases of Children,'¹ which I freely quote, says:

¹ Amer. Journal of Obstetrics and Diseases of Women and Children (Aug., 1875).

‘There is perhaps no question upon which the profession, as well as mothers and nurses, are more at variance than the character of the food to be given in place of breast-milk. One physician, mother, or nurse will recommend cow’s milk, pure ; another, skimmed milk ; another, the same diluted with a little water ; another, water with a little milk ; another, cream and water ; others, milk with corn-starch, arrow-root, crackers, rice, barley, oatmeal, and so on *ad infinitum*.’

‘The author then goes on to show the difference in various constituents between woman’s milk and that of some animals, and in respect to cow’s milk says :

‘The important difference between woman’s and cow’s milk is to be found in this, that the caseine of woman’s milk, of which there are about thirty-eight parts, curdles in the stomach into small, light flakes, forming a readily digested substance, while cow’s milk, containing sixty-eight parts of caseine, the latter coagulates into large, compact lumps, which the infant gastric juice is incapable of dissolving.

‘In consequence of this peculiarity of cow’s milk, it is unsuitable in its natural state as an article of diet for infants, but efforts have been continually made to render it suitable by the addition of such articles as I have already mentioned. The chief amongst these, or the one most generally used, is water, the object of adding which to the milk is to dilute the excess of caseine, and thus render it more readily digestible, and on this sort of slops many infants do manage to get along, but by far the greater number suffer in consequence. If we look into the subject of this dilution of cow’s milk, we will find that the addition of water only does not improve the digestibility of the caseine—in fact, that this dilution, even with the addition of sugar, does not render it more suitable for digestion and assimilation.’

After condemning very forcibly, and as it seems to me very justly, the administration of farinaceous articles of food to infants, either separately or mixed with milk, Dr. Dawson advises the use of barley-water with milk, as recommended by Drs. Meigs and Pepper, and by Drs. Jacobi and Lewis Smith, of New York. He takes the view, that the addition of barley-water to the milk ‘acts mechanically in preventing the coagulation of the caseine into large hard masses by the action of the gastric juice, and thus enables it to be quickly and easily digested.’

The author sums up his opinion of what he thinks the best combination for feeding infants deprived of breast-milk as follows: ‘Good rich cow’s milk, diluted one-third or one-half with thick barley-water, to which is added a little sugar and

salt, makes, in fact, the most perfect nourishment for the hand-fed infant, provided, of course, that it is not given too abundantly and too frequently.'

Now to obtain 'good rich cow's milk' is very difficult for many people, and next to impossible for most. If good when received, it is very liable to change before it is used, from a great variety of causes, unnecessary to enumerate here. Also, in travelling, the difficulties in the way of obtaining proper milk are very much increased, and the number of children made ill in consequence is so large, that parents are justly unwilling to take the risk of a journey with them, and are thus frequently subjected to great inconvenience. A perfect substitute then for pure cow's milk could not fail to be of great value to the community. But to merit such a title it must

1st. Be everywhere readily attainable, and at moderate cost.

2d. It must be of uniform quality, able to bear all reasonable varieties of climate, be unaffected by motion, and proven by repeated trials to furnish full and proper nourishment to young infants.

Now it is claimed by very many physicians, parents, and nurses, in different parts of this country, that condensed milk, as prepared by the process known as that of 'Gail Borden,' and sold in sealed tin cans under the trade-mark of 'Eagle Brand,' does entirely fulfil the foregoing conditions.

It is with no view of puffing the wares of any particular manufacturer that these names are given, but simply for the reason that all the successful experiments in feeding with condensed milk of which I have any knowledge were made with this particular brand. There may, for aught I know, be others as good.

It is claimed, then, that dilute condensed milk is a perfect substitute for cow's milk, and that infants fed wholly or in part upon it thrive wonderfully well—that where a proper supply of good breast-milk is not obtainable, this preparation of cow's milk is to be recommended as substituting *a uniformity of quality and of constituents* almost impossible to be attained in any other way. Thus in several instances, in families having cows, condensed milk has been substituted for theirs, and the parents say 'the children do better on it.' In such cases the alleged superiority of the manufactured article must be due to the greater uniformity of its constituents; unless, possibly, the condensing process may render the milk less liable to form those large coagula of caseine, which, as Dr. Dawson shows, are such sources of mischief.

I had thought that the process possibly removed some of the caseine, and thus approximated the product more nearly to hu-

man milk, but the accompanying answer of the company to my inquiries on the subject shows that this is not the case:—

‘OFFICE OF THE NEW YORK CONDENSED MILK CO.
NEW YORK, November 28th, 1876.

‘DR. JOHN ELLIS BLAKE.

‘DEAR SIR:—In reply to your esteemed note of 26th inst., inquiring as to whether any caseine is removed from the cow’s milk while in process of condensation, we have to reply that no caseine nor any constituent property of the milk is removed but the water. We have been well aware for some years that our Gail Borden Eagle Brand Preserved Milk seemed especially adapted for infants and young children, and which we attributed to the following, viz.: The milk used at our factories is required to be cooled *immediately* after being drawn from the cow, in order that no decomposition may ensue. It is then subjected to heat below the boiling point, mingled with refined sugar placed in vacuo, and when reduced by evaporation to the proper consistency, is canned and hermetically sealed. By this process no possible decomposition has occurred, and the preserved milk being uniformly the same article, a uniform diet is secured to the child, of milk in perfect condition. You of course fully realize the advantage of such a diet over the use of fluid milk brought into cities, more or less churned, the globules broken and in doubtful condition. We have never had an analysis of our preserved milk made, for the reason that we knew exactly what an analysis would show.

‘Of the many testimonials this company has received, especially from the South, quite a number are from persons who, after bringing up one child on Gail Borden’s Eagle Brand, named their next child ‘Gail Borden.’

‘Very truly yours,

‘N. Y. CONDENSED MILK CO.,
‘AUG. KLEMM, Sec’y.’

More extended, careful observation is of course needed, before either the profession or the community can give an unqualified endorsement to the foregoing views, but I think none will deny that it is to be hoped they are correct, for if dilute condensed milk, either alone or with barley, is the thing to feed babies on, when they have to be fed, it is easy to see that the nursery of the future will be spared many a trial only too familiar in the past to all who have ever tried ‘feeding a baby.’ He will be no longer at the mercy of a lazy cow-boy, or dilatory milk-man, nor will his little bowels be made to growl so often in sympathy with the passing thunder-shower. It would take

much space to enumerate all the advantages which may be derived from the introduction of portable milk into the nursery, if all that is said in its praise be true, and it is pleasant to think that its price puts it within reach of all, and that, during their infancy at all events, Dives and Lazarus can be well content with the same fare."

DR. JAMES B. REYNOLDS considered condensed milk better than fresh city milk. Milk begins to die as soon as it is passed, and the milk we get here comes to us so long after the milking, and is so churned by the transportation, that decomposition is really quite far advanced and the fat globules are much broken. Condensed milk is more uniform in character, and is better preserved. At the New York Foundling Asylum they use the following food: A loaf of bread, deprived of its crust, is boiled to a jelly, and condensed milk and water added in varying proportions. 150 to 200 children are fed on this food, which, after trying all sorts of food, he finds the most generally applicable. Some few children, however, cannot bear it at all.

DR. H. T. HANKS reported a

FATAL CASE OF RUPTURE OF THE UTERUS.

"January 9, 1875, at 4 A.M., I was summoned to see Mrs. P. K., in labor with her fifth child. She was a native of Ireland, thirty-five years of age. Her former labors had been normal. A midwife, who had attended her on a previous occasion, had been in attendance for six hours. She informed me that the present labor had been slow; and that at 1 A.M. she had given a powder of ergot. The amount was not known, but was the same as she usually prescribed. Again at 1.45, the pains not increasing, she gave another powder. At 2 o'clock the patient had several quite powerful expulsive pains. One of these caused a shriek of agony. They then ceased altogether, and the patient began to complain of severe abdominal pains of a different character from the normal labor pains. She soon vomited. These symptoms increasing, the midwife became alarmed, and summoned me to deliver the child. I found the patient very pale, rapid, sighing respirations, skin covered with clammy perspiration, pulse very quick and feeble. The abdomen, on examination, showed two distinct tumors; a large irregular one filled the upper part and extended half way from the umbilicus to the pubes. This tumor was easily moved, but motion caused intense pain. The other tumor was smaller, situated just below the former, occupying the normal position of the uterus just after delivery, to which it corresponded in size, shape, mobility, and density. Vaginal examination showed

the head of the child in the natural position, resting in the hollow of the sacrum, extension not having taken place. The gravity of the case was at once apparent. Brandy was administered, forceps applied, and a dead child quickly delivered. The placenta not following, the hand was passed up—guided by the umbilical cord—through a rent in the posterior cervical portion of the uterus, into the abdominal cavity, underneath the peritoneum, which, instead of being torn through, had been dissected off from the uterus and pressed upwards. The placenta was easily removed. Considerable blood was expelled and removed. On examination the upper abdominal tumor was found to have disappeared, while the other remained as before. Brandy, morphine, and beef essence were administered. At 10 A.M. she was seen again; had not rallied well; pulse somewhat stronger, but very feeble; had vomited several times. Continued the same treatment. Seen by Drs. W. T. White and S. B. Jones. She continued to sink, and died forty-four hours after the delivery of the child. No autopsy allowed.

REMARKS.—It is of interest to note the symptoms of rupture in the order in which they appeared. Labor tardy. Ergot in normal doses, it is believed, at 1 and 1.45 A.M. Several severe pains at 2 o'clock, followed by sudden cessation of all expulsive pains, with commencement of severe abdominal pain of a different nature, recognized as such and described by patient. Nausea, great pallor, cold perspiration, restlessness, and anxiety, quick and feeble pulse. Two distinct abdominal tumors. The midwife who had been in attendance was the most intelligent one I have ever met, yet the trouble was not suspected until my arrival."

DR. CHAMBERLAIN asked if the vomiting was not due to the ergot.

DRS. BYRNE and GILLETTE both said they had seen a number of cases of rupture of the uterus, and vomiting was present in all of them.

DR. HANKS also reported a

CASE OF RUPTURE OF THE VAGINA—DEATH FROM SHOCK AND LOSS OF BLOOD.

"September 27, 1876, at 12 M., I was summoned in great haste to see Mrs. A., in consultation with the attending physician. She was in labor with her second child. Her previous labor had been normal. The physician had been in attendance for three hours when I arrived. The pains had been gradually lessening for one hour. Patient had grown pale; pulse frequent, small, and feeble; respirations rapid and shallow;

skin covered with clammy perspiration. From her previous history the Doctor suspected heart trouble. The clitoris had been very œdematous. The head was in normal position. The Doctor advised the use of the forceps, without ether, and applied them, but without success, the patient gradually growing worse. (All this history was obtained afterwards from the physician.)

I found the patient dying, but advised stimulants more freely while I made examination, hoping to deliver a living child. *Very dark* clotted blood constantly escaped from vagina. The hand, on being passed in, came in contact with something that felt like a small portion of the amnion and chorion when being removed after delivery. It was attached, however, to the vagina at the clitoris. There was a rupture from the clitoris to the junction of the cervix, through which I easily passed my hand, and removed considerable of this dark, coagulated blood. The right arm of the fœtus was felt protruding through the fully dilated cervix. The hand was passed up, and version quickly accomplished. The child was dead. The mother died ten minutes later. The Doctor examined the vagina after death of mother, and confirmed the fact of a rupture of the vagina, involving the clitoris.

No autopsy was allowed."

In reply to a question by Dr. Lee, Dr. Hanks said that he thought the cause of the rupture was a thrombus at the base of the clitoris, œdema, and the use of the forceps.

DR. PAXEN stated that he had seen four cases of rupture of the vagina. One was spontaneous; the lady was in bed, and leaned out to pick up her child, when she was taken with hemorrhage and fainted. A tampon was applied, and she finally reacted. The rent was due to thinning of the vaginal walls by an old hæmatocele. The wound was stitched, and she recovered.

The second case was in a small woman who was delivered of a fourteen pound child. There was laceration both anteriorly and posteriorly. The hemorrhage was profuse, but was stopped by stitches with silk thread.

The third was a forceps case. He tamponed, and subsequently operated.

In the fourth case the laceration was due to a thrombus in the right labium, from the insertion of the round ligament down into the perineum. He sewed up the wound by shoe-maker-stitch, and she recovered.

DR. MUNDÉ said he had seen three cases of laceration of the vagina proper: 1. Primipara; deep laceration of the left lateral vaginal wall during the unaided passage of the child's

head; immediate formation of a thrombus, of the size of two fists, in the left labium majus and perineum. Ice and pressure arrested the hemorrhage. Subsequently the sac of the thrombus was opened, the coagula were removed, frequent astringent and disinfectant injections used, and a good recovery was made. 2. Primipara; occipito-posterior position; generally slightly contracted pelvis; impaction of the head for twenty hours in the pelvic cavity; double application of the forceps, and double rotation of the head with occiput forwards; difficult extraction of a living child: sudden collapse and death of the mother, thirty-two hours after delivery. At the autopsy both lateral vaginal walls were found extensively lacerated and bruised, the tissue being reduced in places to a pulp. Doubtless the long pressure of the head rendered the parts particularly impressionable to the forceps-blades during double rotation, an operation which Dr. Mundé would now no longer perform, preferring to extract the head with face under pubis, or to trust to its rotating within the forceps. 3. Primipara; difficult forceps; deep laceration of posterior wall in two places; rents two to three inches long; recovery.

Stated Meeting, December 19, 1876.

The President, DR. T. G. THOMAS, in the Chair.

DR JACOBI showed a

NURSING-BOTTLE SPECIALLY ADAPTED FOR BABIES TOO WEAK TO NURSE,

• Either from the fact of their being premature, or from insufficient muscular development. It will also answer in cases of fissure of the palate. It is a French patent, and is called the "Biberon Pompe," and works by simple pressure, without any suction action. The modification can be applied to the ordinary nursing-bottle in common use. It consists of a hollow cone of white rubber, with a rim around the base. Near the top of the cone is a transverse cut half-way through, and opening into the hollow of the cone. This is placed in the end of the glass tube which goes to the bottom of the bottle, and acts as a valve. When pressure is made on the nipple, as with the teeth, but without sucking action, the air is forced out of the nipple into the mouth, and, when the pressure is removed, the air is rarefied, the valve opens, and milk is drawn in. In this way the tube is gradually filled, and milk brought into the mouth.

DR. HENRY F. WALKER reported the case of a

SMALL COPPER CENT SWALLOWED BY A CHILD OF THREE YEARS,
AND RETAINED MORE THAN A MONTH IN THE INTESTINAL TRACT.

"On Monday afternoon, November 13, 1876, Louisa W., a stout, healthful child, three years old, was playing with a small copper cent. She placed it in her mouth, and it passed downward, giving rise to a good deal of choking for a few moments, but no discomfort afterwards. Two hours later she ate heartily of solid food. At the time of the accident the parents of the child were away, and on their return, feeling alarmed, consulted a neighboring physician. He advised a dose of oil, to be repeated in two hours' time, if inefficient. This produced catharsis during the night. The oil was given again the following day, with cathartic effect, but without expelling the penny. Meantime the child was restless and uneasy, complaining occasionally of pain, and always indicating the pit of the stomach as the seat of distress. She coughed on lying down, and, though she would drink readily, she refused utterly to take solid food.

Dr. Thomas saw her first on Thursday, the 16th, and advised giving her ipecac. The child took several doses of the syrup, without emetic, though with laxative effect. Fearing that the special preparation used might be inert, the syrup was obtained at another druggist's, and thorough emesis was excited. This was on Friday, the fifth day. The refusal to take solids she maintained. She would take but little milk or soup, but drank water eagerly.

On Saturday Dr. Thomas and I saw her together. She gave no new symptoms. She was running about; would occasionally cough, and occasionally fret with pain in her stomach, placing her hand on the epigastrium.

We felt convinced that the coin was in the œsophagus, toward its lower portion, held very likely by spasm of the tube.

I etherized the child, and Dr. Thomas passed a delicate whalebone probang, armed with a small sponge, into the œsophagus. At about six inches from the lips it was met by something resistant. I repeated the manœuvre, but was unable to carry the probang further, without using more force than I deemed proper. That night the child ate a cup of broth and one or two small 'Albert' biscuits—more food than she had taken since Monday. During the night she was much less disturbed by cough. The following day, however, her symptoms were unchanged. Tuesday we proposed another exploration, but deferred it, at the mother's request, till Wednes-

day, November 22d, when I anæsthetized her again, and Dr. Thomas attempted to pass the expanding bristle probang, but failed, owing to the narrowness of the œsophagus. He then passed a long flexible catheter (No. XIV., English) into the stomach, meeting only slight resistance, and that lower down than before. I repeated the operation for assurance, and afterward we passed the sponge probang easily. We inferred that the coin was held by the œsophagus, near the cardiac orifice, having been partially dislodged or tilted by the first procedure, and carried down by the last effort.

Friday, Nov. 24.—We were disappointed to find the child no better; taking fluids only, and refusing all solids. The parents are unwilling at present to have further effort made.

December 6th.—The child coughed violently during the early part of the night, for two or three hours, with slight intermissions. Next morning, December 7th, she ate freely of solid food, the first time in nearly a month.

December 14th.—The child voided the penny while at stool. From the time of the severe coughing-fit on December 6th, till December 14th, when the penny was expelled, all symptoms disappeared. The cough evidently effected the dislodgment of the penny, which passed into the stomach, and then, earlier or later, began its passage through the bowels, which it accomplished in another week."

DR. JACOBI remarked that it was found just where the symptoms indicated. The cough, when on the back, showed that either the infra-laryngeal nerve or the trachea were pressed upon. The nerve had probably little to do with it, but the œsophagus and the trachea at that point were only separated by a thin septum, so that any foreign body in one would irritate the other. The narrowest part of the œsophagus is $8\frac{1}{2}$ " from the teeth in an adult, and about 6" in a child. In such cases drastics should not be given, but solid food, to break up and envelope the foreign body and prevent its irritating the intestinal canal.

DR. THOMAS mentioned a case which lately happened in the practice of Dr. R. F. Weir, where a safety-pin was swallowed, the pin being open. The doctor gave plenty of solid food, and the pin was soon passed. It was stopped at the anus, but was easily disengaged.

DR. CHAMBERLAIN asked why Dr. Thomas did not try the basket bougie to remove the penny.

DR. THOMAS answered that the difficulties of passing any instrument in a child of that age, when under ether or not, are very great. Another reason was that the parents consented with great reluctance to any operative interference, a child in

the family having been recently killed by the forcing of an instrument through the walls of the œsophagus under similar circumstances.

DR. PEASLEE mentioned a case where a copper cent remained in the stomach of a child three years of age for a month. When finally passed it was nearly half destroyed by the action of the acids of the stomach. The child was in very poor health, which was attributed by the attendants to the absorption of copper, an opinion with which Dr. Peaslee did not agree.

DR. THOMAS mentioned that one procedure which had been tried and failed, was to give an emetic and then to hold the child up by the heels during the act of emesis.

DR. JACOBI did not think this plan would always be safe, as the congestion of the brain, caused by the emesis, would be increased by gravitation and might be detrimental. The coin was grasped by the muscles, for being held in the narrowest part of the œsophagus, the irritation of its presence caused a secondary spasm which helped to retain it.

DR. THOMAS did not fear the congestion of the brain, and thought no evil could come of such a practice. He thought that the coin was held not by spasm, but by being flattened to the walls by the instruments, instead of being pushed down.

DR. HANKS showed a

SPRAY-PRODUCING APPARATUS FOR THROWING CARBOLIC ACID SPRAY
IN OPERATIONS ON THE ANTISEPTIC PRINCIPLE,

and explained the contrivance as follows:

“At my suggestion and direction, Stohlmann, Pfarre & Co., 107 East 28th street, have constructed the apparatus here presented. The stand, boiler, and lamp correspond in design to the common atomizer, now so generally used for inhalation purposes, but are much larger. The open glass vessel for holding the antiseptic fluid has a capacity of one pint, and is held in position over the boiler in a shallow metal cup. The latter is made to move forward and backward by means of a thumb-screw which is attached to an erect rod, fastened at the base of the apparatus. The rod in the cut is necessarily concealed from view. There is a small stop-cock arrangement low down at the side of the glass vessel, thus regulating the amount of antiseptic fluid which flows downward to the atomizing points. The long metal arm, into which is fastened in the usual manner the glass or metal-spray producer, is attached to the boiler by a kind of elbow-joint, thus enabling the spray to be projected forward at any angle. The alcohol lamp has a

large tube for the wick, and over this is a second tube which slides up and down by means of a ratchet. The handle of the ratchet is seen in the cut. It readily controls the size of the blaze, the degree of heat, and the amount of steam produced. Great care should be exercised in selecting a suitable atomizing point. With a proper point a coarse or fine spray may be produced, according to the amount of antiseptic fluid admitted through the stop-cock. The force of the spray will depend upon the *blaze*, and the consequent amount of steam; and the angle of the arm will regulate its direction.



The apparatus thus constructed will supply a suitable spray for a two hours' operation, as the antiseptic fluid can be replenished as required. I claim for it its portability, small size, safety, durability, and cheapness. The cost is about \$15.00, and in every way contrasts favorably with the Lister or Sass apparatus."

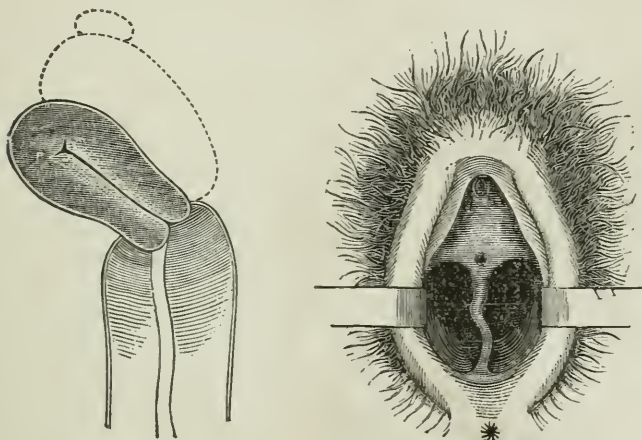
DR. THOMAS remarked that he had recently performed ovariectomy under carbolic spray. The operation lasted twenty-six minutes. The spray was so heavy as to be objectionable, and before the operation was finished, his fingers were so benumbed as to be almost incapable of feeling. The solution used was of the strength of 1 : 40.

DR. ROBERT WATTS reported the following

CASE OF DOUBLE VAGINA WITH SINGLE UTERUS.

"M. S., æt. 27, married, was admitted to the Roosevelt Hospital, Nov. 22, 1876, and gave the following history:

Menstruation began in her fifteenth year, and was always regular and painless up to one year after her marriage, which took place five years ago. Then menstruation, which had come on naturally, was suppressed by exposure to cold, and inflammation of the bowels set in, causing an illness of about two weeks. The next menstrual period was preceded by quite severe constitutional disturbance, and each succeeding period has been accompanied by dysmenorrhœa. For the last two months she has had a moderate leucorrhœa.



Coition has always been somewhat painful to the patient and difficult to the husband, on account of some obstruction. Patient has never been pregnant, and seeks relief from the dysmenorrhœa and sterility.

Physical Examination.—The external genitals are well developed. On separating the labia there is seen a vertical septum dividing the vagina into two distinct canals, each of which will admit a medium sized cylindrical speculum with ease. The right vagina is a simple cul-de-sac, while in the left is a cervix of normal appearance with a small, circular os. The septum starts from a point on the cervix about half an inch to the right of the os, and extends down in the median line to the ostium vaginae. It is complete, there being no com-

munication between the two canals. The uterine sound enters to the depth of two and a half inches, and shows the uterus to be inclined to the patient's right.

By conjoined manipulation, through the rectum, the uterus is felt inclined to the right; on its left side, closely attached to and movable with it, is a tumor of somewhat larger size, and on the top of this is a small, almond-shaped body, which is supposed to be the left ovary. A sulcus is felt between this tumor and the uterus, both in front and behind, and it gives the impression of a second uterine body; but from the history of previous inflammation, and from the fact that two separate cornua cannot be felt, it is considered to be an exudation in the left broad ligament. No opening can be found into the uterus, except the one in the left vagina, and no septum in the uterus itself can be detected. The uterine sound can be passed in no other direction than towards the patient's right.

The sterility is explained by the fact that owing to the inclination of the septum towards the right, coition always takes place in the right vagina, or cul-de-sac."

DR. PEASLEE said that he had recently seen two cases of vagina septa, and in both there was an os in each vagina. The uteri diverged somewhat, and the fundi were not united.

DR. NOEGGERATH said that the exact diagnosis could be made out by drawing the uterus down and passing a finger into the bladder. Since reading his paper on this subject he had had renewed proof of its advantages. He had often felt the whole of the uterus, the tubes, round ligaments, and all by this means. He mentioned a recent case where all external examination through a very flaccid abdomen failed to discover two small fibroids ($\frac{1}{8}$ " square) situated in the anterior uterine wall.

DR. THOMAS remarked that in cases like Dr. Watts' the diagnosis is not always made at the first examination. He had seen several cases of double uterus and vagina where the speculum had been repeatedly used without discovering the anomaly.

DR. MUNDÉ moved that as the case was not fully understood, with Dr. Watts' consent, a committee of three be appointed to examine the patient and report thereon. Dr. Watts assenting, Drs. Mundé, Noeggerath, and Thomas were appointed such committee, and reported at a subsequent meeting that they entirely concurred in the diagnosis and explanation given by Dr. Watts. The tumor to the left of the uterus was undoubtedly an old cellulitis of the left broad ligament, and the small nodule on the top of this exudation-tumor might fitly be looked upon as the ovary. The tumor was slightly sensitive and firmly attached to the uterus, and movable only with it, and that to a limited extent. The uterus was in right lateroversion.

The septum was divided, Jan. 27th, 1877, by the galvanocautery, and the patient made a good recovery from the operation.

Stated Meeting, January 2, 1877.

The President, DR. T. G. THOMAS, in the Chair.

DR. JAMES S. GREEN presented the specimen and read the following history of a

CASE OF RETROUTERINE SARCOMA OF VAGINAL ORIGIN.

"Mrs. H. K. S., Elizabeth, N. J., æt. 44, married nineteen years. Had four children, the youngest now six years old. Menstruation always regular. Health always good, except that for the last ten years she had had a mild chronic diarrhœa. Had a 'blind' anal fistula four years ago, which was relieved by an operation.

She stated that about two years ago, during a menstrual period, she passed, by the vagina, three fleshy masses, of the size and shape of butternuts, and that she had since noticed a gradually increasing difficulty in coition—the vagina seeming to be partially obstructed.

After January 1st, 1876, following each menstrual period, she had a vaginal discharge of thin, dark-colored pus, of a very offensive odor.

Her previous history presented no indications of her having had pelvic peritonitis, cellulitis, hæmatocele, or any disease of the uterus or ovaries.

March 20th, 1876, at the close of a menstrual period, she had retention of urine. This was relieved by the use of the catheter, and a vaginal examination made which revealed a tumor occupying the posterior and right side of the pelvis, beneath the vaginal wall, and nearly filling the cavity of the pelvis. The part of the tumor presenting was of a rounded form, quite smooth, very hard though somewhat elastic to the touch, the whole appearing to be firmly fixed in position by adhesions to the sacrum and right wall of the pelvis. The os uteri was pushed upward and forward almost out of reach of the finger.

The tumor was regarded as the fundus of a greatly enlarged retroverted uterus. About April 12th, she consulted Dr. T. Gaillard Thomas, who made the diagnosis of sarcoma of the body of the uterus. Prognosis unfavorable. In accordance with the recommendation of Dr. Thomas she was placed upon the use of vaginal injections of warm water, applications of

tr. iodine to the hypogastrium, iron and quinine, and a diet consisting largely of milk.

May 14th she had a severe chill, attended with nausea, and violent pains in the pelvis, back, and thighs. This was repeated once or twice daily for four or five days, but gradually yielded to the use of opiates and sulphate of quinine. A similar attack occurred July 21st, which was relieved as before.

At that time the tumor filled the pelvic cavity quite closely, reaching nearly to the perineum. The os uteri was entirely out of reach above the pubes. About August 1st the offensive discharge from the vagina ceased. During August and September she had slight metrorrhagia. After Sept. 1st she began to suffer from intense neuralgic pains in the pelvis, thighs, rectum, and bowels, at first coming on only at night, but gradually becoming continuous, requiring large and increasing doses of opiates for her relief. From this time her general health, which had previously been good, began to deteriorate, she lost flesh and strength rapidly, and was confined wholly to her bed. The retention of urine became more troublesome, a moderate amount in the bladder causing intense pain and tenesmus.

The purulent vaginal discharge returned about Oct. 20th, and continued during the remainder of her sickness.

Oct. 29. Showed evidences of cerebral congestion, probably due in great part to the continued use of opiates. Slept heavily most of the time; when awake was delirious and very restless. Discontinued opiates and gave full doses of bromide of sodium, and in about five days she returned to her previous condition. Nov. 12 she had a similar attack of cerebral congestion, lasting about four days, but leaving her mind somewhat disordered.

Nov. 27. She had a third attack, after which she was hardly rational at all, gradually passing into a condition of almost complete dementia. She continued in this condition, her death expected almost daily, until Dec. 24th, when she sank into a state of coma, and died at 9 o'clock P.M.

Autopsy, Dec. 26th, forty-two hours after death, in the presence of Dr. Jas. S. Green and Dr. J. Otis Pinneo. Rigor mortis well marked. Body considerably emaciated. Abdomen quite flat, skin slightly discolored about the umbilicus. Upon opening the abdomen the uterus was found in the left iliac region, of nearly normal size and appearance, the body being perfectly free and movable—the os attached to the tumor which occupied the true pelvis. Its axis was nearly parallel to that of its natural position, it being simply carried upward and to the left. The right ureter was enlarged one-half inch

to one inch in diameter, sacculated, and distended with fluid, being constricted by passing through the tissue connecting the os uteri and the tumor. The tumor was found to fill closely the cavity of the pelvis, the vagina passing to the left, in front. It was strongly bound down by adhesions, particularly upon the posterior surface and right side. The tumor, uterus, ovaries, and bladder, are here presented, making further description unnecessary."

DR. THOMAS remarked that he saw the case in May last, and that it then impressed him as being most curious and remarkable. He did not think that it was fibroid, although it resembled one in some respects. There was, however, most intense pain, the tumor was firmly adherent to all the adjacent tissues, and there was a fetid discharge. From these points, and from the great depression of the patient's health, as well as from an indescribable peculiarity about the case, he gave an unfavorable prognosis, an opinion in which several gentlemen who saw the case with him concurred.

It is an interesting point to determine now whether the tumor is connected with the posterior uterine wall or what is its point of origin. He remembered a case of uterine fibro-cyst weighing 40 lbs., where the connection with the uterus was no larger than the finger. The tumor was mistaken for ovarian.

DR. PEASLEE said that in this case the connection with the uterus was very slight, if it existed at all. He asked whether the patient died of uræmia.

DR. GREEN replied that there were no signs of uræmia. He also mentioned that the mucous membrane of the cervical canal was mostly destroyed and that the fetid discharge might have come from that.

DR. PETTIT, under whose care the patient had been, said that he never saw such agony as was produced by the tumor, especially during the last two months of the patient's life. English chlorodyne was the only opiate which could be endured. The other organs of the body were not examined for secondary tumors.

At the subsequent meeting the pathologist, DR. MANN, reported on the specimen as follows:

"The specimen consists of the uterus, bladder, vagina, and tumor, all hardened in alcohol. The uterus is normal in size. The anterior wall contains a small myoma, of the size of a pea. On both sides of the cervical canal there is a loss of substance, the excoriation being nearly one inch deep, the sides sharply cut, and in some places undermined. The bladder seems normal. To the posterior surface of the uterus and vagina, somewhat to the left, is attached a large rounded

tumor about 6'' in diameter. The attachment is only connective tissue, which is easily broken down by the finger. On the posterior surface of the vagina and to the left is a firm infiltration of the submucous tissue, which, on section, proves to be of the same character as the tumor; and as there is no other point of origin to be found, we may safely consider this as the point from which the tumor developed. On microscopical examination the tumor and vaginal infiltration prove to be sarcoma. The cells are rather large, rounded, with a tendency to the spindle-form, and the intercellular substance well developed and granular. We may call it then a sarcoma of the submucous tissue of the vagina."

DR. M. A. PALLER read a paper on

THE INSANITIES OF FEMALES.¹

DR. PEASLEE said that the subject was one of great importance. Dr. Storer had read a paper ten years ago in which he advised that every asylum for the insane should have a competent gynecologist attached to its staff. The idea was ridiculed by all except gynecologists. Dr. Peaslee thought at the time that it was too soon to carry out the plan, but he had seen so many cases of insanity, which were just ready to be sent to the asylum, where the cause proved to be curable uterine or ovarian disease, that he had thought Dr. Storer's opinion should be followed, and he was of the same opinion still. He thought there were many cases in every asylum which could be cured by proper uterine treatment.

Dr. Parsons, of the Blackwell's Island Asylum, recognizes the relation existing between uterine disease and insanity, and often calls upon him or other gynecologists to examine the cases and direct the treatment, and has thus succeeded in curing a number.

If these cases were recognized and treated at once they might be cured, but if the case were neglected, complications soon followed, which aggravated the trouble and soon rendered the patient incurable. He thought the laws should be modified, in accordance with the special causes for mental disease existing among females, which do not exist in the male sex, and this difference should be recognized and utilized.

As regards infanticide, he believed there were many cases in which temporary mental aberration existed, and the women were not responsible; but this certainly was not always the case. A careful sifting of the previous history would generally enable a true diagnosis to be made.

¹ See ORIGINAL COMMUNICATIONS in this Number.

DR. Lusk remarked that there is another side to the question, for he had seen cases of insanity which presented all the symptoms of uterine disease, but still no such disease could be found.

He related the history of a case which would be called puerperal mania, but was not due to any disease of the sexual organs. The confinement was natural, and after two weeks he dismissed the case. He was soon summoned again, and found the patient suffering from great pain and dyspnœa. The pain was abdominal and colicky in character, and the dyspnœa was due to eructations so constant and severe as to threaten the patient's life through obstruction to respiration. A few drops of chloroform stopped this and she recovered. This attack was brought about by over-eating. The next day there were symptoms of acute gastric catarrh. She then went three days without food, and the next day was in a state of acute mania. The day following this, by quieting her anxieties and by persuasion, he induced her to get to sleep, and she slept ten hours. The next day she was again maniacal, but again yielded to persuasion and slept all night without medicine and awoke in her right mind. She was, however, greatly excited by friends, and again became maniacal, but again slept and awoke quite well, and has remained so. During her mania the patient was nourished by enemata of Leube's solution q. s., with $\frac{5}{8}$ ss. of brandy. Nutrition was thus kept up and the exhausted brain given a chance to recover. The Doctor believed that the cure was largely due to the personal influence of the physician, which should always be exerted. There was no disease of the genital organs.

DR. BLAKE said that he had recently seen a case, which under less favorable circumstances would have gone to an asylum as incurable. After confinement, complete involution did not take place, and at each recurring menstrual epoch there was marked cerebral congestion, and the patient exhibited symptoms of mania, and great fear of being sent to an asylum. By the use of leeches, cups, etc., at the approach of each period, the patient gradually improved and is now well.

DR. REYNOLDS said that there were very many cases of infanticide which are not due to temporary insanity, and stated as a proof that, before the establishment of the Foundling Asylum, there were sixty to eighty cases a month. One year after the opening of the Asylum, the average was twenty; in a single month of one year, there were eighty cases, and in the corresponding month of the year after the institution was founded, there were but eleven.

DR. MUNDÉ asked, how long a woman could be considered to be under the influence of the puerperal condition?

DR. PALLER thought until involution was completed.

DR. THOMAS said that the period was very much longer, in his opinion, for many cases of mania occurred as late as a year after labor, when lactation was maintained, which had all the symptoms of, and might properly be called puerperal mania. He mentioned a case of a wet-nurse, who was apparently well and sound at ten P.M. At three A.M. the same night she was found walking the house perfectly crazy. This was about nine months after confinement. At the end of three months more she was well again. He had known a similar case to occur a year after delivery.

DR. PEASLEE said that it was very hard to draw the line between puerperal and other causes. Dr. Thomas's case was probably due to cerebral exhaustion, through lactation. We might call this puerperal mania, but it was no more puerperal than if it had been produced by an acute anæmia. It is not necessary to find uterine disease in a woman, even after confinement, to account for an attack of mania. She has gone through an experience which has had a great effect on her nervous system. There is no disease, but a great nutritive change, and this change has been too much for her to withstand.

As for infanticide, there are certainly many cases where there is no insanity present, but that there are cases where the action of the mother is due to insane impulses there can be no doubt. There should be some way of giving such a woman the benefit of the doubt. Still, we can set no limit to the time during which the influence of the puerperal condition may last.

Stated Meeting, January 16, 1877.

The President, DR. T. G. THOMAS, in the Chair.

DR. WALTER R. GILLETTE related the history of a

CASE OF RUPTURE OF THE VESTIBULE DURING LABOR,

by the passage of the shoulders of the child. The patient, æt. forty, primipara, was confined in Charity Hospital. On being sent for, the doctor found a large anæmic woman, nearly comatose; the uterine contractions powerless; the urine albuminous; the pulse weak and rapid. Position of child l. o. a. The pelvis of male type. The forceps were applied, and the head extracted with great difficulty by the house-physician, and the shoulders only after prolonged and exhausting efforts by Dr. Gillette himself. The perineum was not ruptured by the passage of the head, but yielded as the shoulders passed. The child was still-born. Immediately after delivery there was a

rush of blood from the vagina. The uterus was firmly contracted, and the blood was found to proceed from a rupture of the bulb of the vaginal vestibule, which occurred during the extraction of the shoulders. The blood continued to well out very freely, and was finally stopped by a tampon and bull-dog forceps, but only after the patient had lost a great amount. She made a good recovery. Dr. Gillette remarked that he had seen no reference to such cases in the ordinary text-books; he considered that the pressure of the head, which had been engaged so long, had so injured the tissues that they readily gave way under the distention caused by the passage of the shoulders.

Dr. MUNDÉ said that he had seen a similar case, also in a primipara, but the rupture had been caused by the passage of the head. The tear was to the left of the clitoris, and made a deep gaping wound. Pressure, ice, and styptics, stopped the bleeding only momentarily, and it was permanently arrested only by seizing both lips of the wound in an artery-forceps, and enclosing the whole mass in a firm ligature. The patient readily recovered in spite of the great loss of blood she had endured.

Dr. Mundé said that Dr. Peter Müller, now Professor of Obstetrics in Berne, had described four additional cases of this injury, two of which died from hemorrhage before he arrived. Winckel mentions five cases, in which the hemorrhage was arterial; Klaproth, four of pure venous nature; and Schroeder enumerates thirty-six cases of puerperal laceration between the urethra and clitoris, seven of which—all in primiparæ—bled profusely, one even from three arterial twigs at once.

Dr. Mundé asked Dr. Gillette on which side the laceration in his case was, and being told that it was on the left side, said that that was where he would have expected to find it in a l. o. a. position. He thought that the rupture was more likely to occur on the side where the occiput was situated, that being the broadest part of the child's head, and distending that side of the anterior commissure more sharply as it passed through.

Dr. THOMAS mentioned having seen three cases in parturient women, and one in the non-pregnant state. Simpson mentions having seen several cases in non-pregnant women, in some of which the husband had been arrested and tried for murder, he having been supposed to have inflicted the wounds by direct violence; but the latter is by no means always essential to their production, for they have occurred while straining at stool or during urination, and other equally trifling exertions.

Dr. Thomas saw one case in a young lady who was injured

while climbing a fence, and came near bleeding to death. The hemorrhage was finally stopped by a tampon.

The first case seen following parturition, was in the practice of Dr. Richardson. The patient had a natural delivery, and the uterus contracted well. But two hours later the doctor was recalled, and found the patient drenched with blood. He sent for Dr. Thomas, who found a rupture of the bulb of the vestibule, and finally controlled the bleeding by putting in a pin, and applying a figure-of-8 ligature over it.

The second case was seen with Dr. Elsberg. There had been a hæmatocele on the left side, which had ruptured, and given rise to profuse hemorrhage. This was controlled by a tampon. The wound contracted, and healed easily.

In the third case rupture followed the application of the forceps, though the instruments were not the cause, but rather the over-distention of the parts. A tampon was applied, and kept in place by a T-bandage. The ordinary T-bandage was not used, but a more efficient substitute, viz., a broad band of adhesive plaster applied over the sacrum, and then brought up and over the abdomen, and firmly secured by a belt of plaster.

DR. W. R. GILLETTE read an account of

A NEW OPERATION FOR THE CURE OF RECTOCELE AND CYSTOCELE.

“The operations for the cure of those distressing conditions, rectocele and cystocele, are tolerably familiar to the profession, not however, in the sense that they are operations which, as at present devised, may be performed by the general practitioner. On the contrary, admirable as are the methods of operating for the cure of this condition, known as Sims’s, Emmet’s, Thomas’s, Peaslee’s, and Noeggerath’s, they are of extreme difficulty of performance by the general surgeon, and require, as we all know, a high degree of skilled and expert labor to perform them at all successfully. These operations, therefore, which by the necessity of their ingenuity, are confined to a few skilful gynecologists, must limit their beneficial results to a very few who are suffering from these conditions.

The operation I present is an extremely simple one, and one which in another form of disorder is familiar to every one in the profession—namely, the ligation of hemorrhoidal tumors. Exactly the same principle and methods of relief and cure are presented in the one as in the other. I have operated seven times for rectocele and cystocele by this method of ligation within the last three months, and with such gratifying results that I do not hesitate to recommend this operation as one which

may be done with as good a promise of cure as can be offered by any method, and with much greater facility and celerity, with less loss of blood (indeed it may be said to be a bloodless operation) than any.

I have operated five times for the cure of rectocele, and twice for the cure of cystocele.

The operation for the cure of rectocele is as follows: The patient is to be prepared by simply evacuating the rectum and the bladder; anaesthetized, and placed in the 'lithotomy' position.

The rectocele is then to be seized with a tenaculum or vulsellum forceps, and dragged outwards and upwards. Thus held, it is handed to an assistant with directions to keep it in position. The index finger of the left hand is now passed into the rectum as a guide, over which the needle, threaded, is to pass. An ordinary straight needle, two inches long, is to be threaded, with a heavy, twisted, double ligature, and entered laterally to the mass, at the point of its widest diameter, passed carefully in a direction from left to right in the cellular tissue, between the vagina and rectum, and made to emerge directly opposite to the point of entrance. This step of the operation is the only one in which downright care or solicitude need be exercised, for it would be extremely disastrous if, in passing this needle and ligature, a portion of the rectum were to be caught, inasmuch as recto-vaginal fistula would be sure to follow. There is no danger of this if the finger in the rectum does its intelligent duty as a guide, for the intercellular connections between the vagina and rectum are extremely loose and abundant, and there is no difficulty in passing the needle safely, with a very little care.

The needle now having been passed through, the ligature is cut close to the eye, and the vaginal mass is ready to be ligated in two equal halves. This must be done with sufficient effect to insure the complete strangulations of the parts. To this end the lower half of the mass is tied as tightly as possible, and we must be certain, before securing the ligature by the final knot, that the mass is dying, by the evidences of its becoming purple and cold. The upper mass is to be treated in the same way. The tenaculum or vulsellum forceps is now to be removed, and the parts allowed to drop back in their place.

The operation upon cystocele is almost exactly similar, except that the patient is to be put in the semi-prone (Sims's) position, and the needle passed with the greatest possible care, so as not to include the walls of the bladder. It is best to transfix with the needle, and then, before drawing through the ligatures, carefully examine with a probe, or sound, in the blad-

der along the course of the needle, whether any metallic substance can be felt. This is the way I have operated ; but to be still more secure or confident the finger may be passed through the urethra, into the bladder, and the needle passed over it as a guide, just as in the operation for rectocele, the finger in the rectum was used as a guide. I believe Dr. Noeggerath operated recently in this way.

I have found that so much effort has to be made to secure the masses tightly, that hereafter I shall operate on large tumors by passing the double ligature to and fro three times, so as to ligate the mass in four sections.

Thus *tumor* will represent the part to be removed, with the double ligature transfixing it in three sections. (Fig. 1.) Cutting the ligatures at the points of emergence, will permit me to tie as indicated in Fig. 2.

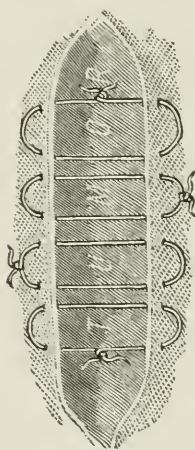


FIG. 1.

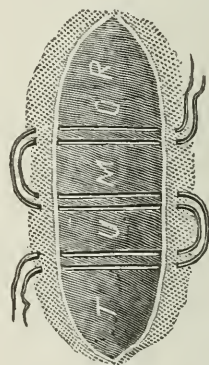


FIG. 2.

The patient is now to be put to bed, and an opiate administered, if necessary. It will not often be required if the masses have been properly tied—that is, if they have been utterly destroyed by their circulation being strangulated. In one case where I did not tie sufficiently tight, there was considerable pain, which, however, was relieved by at once ligating the masses again, and securely.

The patient is to be permitted to have her evacuations from the bowel or bladder, naturally, and so far I have only seen one case where the catheter was requisite.

After-Treatment.—The vagina is to be syringed, as often as may be necessary, with carbolized water, to insure cleanliness.

In the course of from four to seven days the masses drop off, leaving the stumps to heal by granulation. This they do in the course of from two to four weeks. I speak only from my experience with patients who would not remain in bed, but who insisted upon getting up and going about as soon as the masses sloughed off. I think they would have healed much more rapidly if I could have kept them in bed.

The operation thus performed will be seen to be exactly similar to that for the removal of hemorrhoidal tumors by transfixion and ligation, and like it, is extremely simple of performance. It requires, after the patient has become anesthetized, but a few minutes of time for its completion. It is almost bloodless, and accompanied by no more danger than the ordinary hemorrhoidal operation. The cases operated upon have been under my observation, and so far as I can foresee are successful.

The operation is not designed to overcome those extreme cases where the hernial protrusion of the vagina is due to a loss of the perineum, and where perineorrhaphy is necessary to a permanent cure, but in the latter class of cases there can be no objection to supplementing the treatment by ligation, with that of the rational and standard operation for the restoration of the lost perineal body."

DR. JANVRIN objected that the operation could not be carried high enough to do much good.

DR. GILLETTE replied that this was the only difficulty, but he had succeeded in removing enough to prevent all bulging, and relieve the worst symptoms.

DR. THOMAS remarked that this condition of rectocele was often due to subinvolution of the vagina, and even the perineum might be affected in the same way. In such cases Dr. Gillette's operation might be of great service and should be tried.

DR. THOMAS related a case of

RESUSCITATION OF A NEW-BORN CHILD BY FARADIZATION.

He saw the mother about 1 P.M., when she had been in labor twenty-four hours. The water had broken six hours before. The head was above the brim, not engaged. The os undilatable, and the size of a silver dollar. Version was impracticable. The douche was used 1½ hour, and at 4 P.M. the os was dilated, the long forceps applied and the child delivered.

It was breathing, and was left alone. In about thirty minutes after, the child was noticed to be breathing only four times a minute. The respirations were gasping, and the heart was beating in a slow, heaving manner. All the usual methods

of resuscitation were tried and failed. The Doctor then drove home, and, after a considerable delay, went back, over half a mile, with his Faradaic battery. The child was then moribund, the breathing apparently stopped. The poles of the battery were quickly applied, at first, one over the pectoral muscles and other places, without effect. It was then tried, one pole a little above the sternoclavicular articulation, and the other over the diaphragm. In fifteen minutes the child was breathing well, and continued to do so without the current.

The Doctor remarked that he had never tried faradization before, and was surprised at the results obtained.

DR. REYNOLDS said that he had tried it in a similar case, but had failed.

DR. GILLETTE said that he had used the battery in such cases, but without very definite ideas as to where the poles should be put, and he thought that this was one reason why better results had not been obtained.

DR. MUNDÉ read a case of an asphyxiated child resuscitated by the induced current, which soon afterwards died. The child was delivered by version, and was asphyxiated, but the pulsations of the heart were still visible; friction, artificial respiration, rolling from side to side, and insufflation of air into the trachea by a catheter, were all in vain; finally faradization of the phrenic nerve and diaphragm was resorted to.

With each application a deep respiration occurred, and finally, by regular application for one hour, twenty times the minute, simulating regular respirations, the rhythm was brought about and the child left quietly breathing. It soon however relapsed into partial apnoea; the intervals between the inspirations becoming longer and longer, until it died three hours later. Towards the end faradization proved unavailing. He had tried it several times, but had found that in cases where artificial respiration, etc., had failed, it also was of no avail. Perhaps, if tried at once it might have succeeded.

SPECIMEN OF A UTERUS, THE CERVIX OF WHICH WAS AMPUTATED BY GALVANO-CAUTERY FOUR YEARS PREVIOUSLY.

DR. BYRNE exhibited a uterus and portion of vagina, removed post-mortem within a few days past, amputation of the cervix by galvano-cautery having been performed over four years ago.

"The main points in the history of the case may be briefly stated as follows:—Mrs. A., aged 28, married several years, but sterile, had always suffered from dysmenorrhœa. Had been treated for "inflammation and ulceration of the womb" by her family physician, at whose request I was called to see her,

and by whom the usual active topical applications were had recourse to without benefit.

By digital examination the cervix was found to be very voluminous and in the centre of its presenting surface conveyed to the touch a fungous sensation, but towards the circumference gradually becoming less spongy, yet uneven and indurated. The whole portio vaginalis seemed to be about one inch and a half in length, and as much transversely, and was exquisitely tender to pressure, or when moved in an upward or lateral direction. On examination by speculum about one-half the cervical extremity was covered by luxuriant granulations, bleeding freely on the most gentle application of the sponge, and gradually fading away towards the circumference, which was livid, glistening, and irregular. The cervical canal, for the space of an inch or thereabouts, freely admitted an ordinary sound, but beyond this point nothing larger than a small probe could be passed, even then with some difficulty, and apparently in a tortuous course to the extent of three and one-quarter inches. The existence of carcinoma was surmised, but whether the conditions above described might have been due in this particular instance to simple inflammatory processes, or malignant disease, seemed to me to be a question of but little practical importance so far as influencing the treatment.

Suffering as she did from obstructive dysmenorrhœa during her whole menstrual life, thereby developing, probably, nutritive hypertrophy and elongation of the cervix long anterior to the inflammatory stage, amputation of the cervix offered not alone the only, but a very promising means of permanent relief. This operation was at once proposed, and within a few days thereafter performed by galvano-cautery; stenosis of the os internum, should such be afterwards found to exist, could be remedied without difficulty.

To the subsequent history of this case, I would now call especial attention, as satisfactorily accounting for the condition of parts observable in the specimen before you.

So far as could be seen the case appeared to progress favorably, and the patient enjoyed that usual immunity from surgical fever and peritonitis so peculiarly characteristic of electro-cautery operations. Such, however, was the shattered condition of her nervous system from long suffering previously, and feeling quite satisfied with her already improved physical condition and freedom from pain, that she persistently refused to submit to the necessary inspection of the parts, or any local treatment whatever.

The succeeding menstrual period passed over with little if any inconvenience, but the second less so, while the third, then

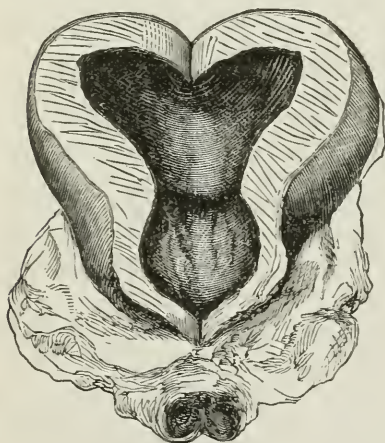
about ten weeks after operation, was ushered in and accompanied throughout with dysmenorrhoeic symptoms, of a more acute and distressing character than at any previous period, even before her operation.

At the urgent solicitation of her medical attendant a proper physical examination was now consented to, and I was requested to see her with that view.

By digital exploration the vaginal canal was found constricted at about its upper third, at this point barely admitting the index finger, and beyond was felt a puckered depression marking the entrance to the uterine cavity.

On introducing the speculum, and by aid of a broad fenestrated polypus forceps, the circular band of condensed tissues which divided the vaginal canal transversely into two unequal parts, was slightly stretched and the circular conical depression referred to brought into view. This cupping of the cervical stump seemed to be formed by numerous small bands of cicatricial tissues radiating from the more elevated circumference to the centre, and converging around a minute circular opening. This barely admitted a small probe, which, however, having

once cleared the cicatrix, passed freely through the upper canal.



At this stage of the examination the patient, who I should state, would not consent to the employment of an anæsthetic, became so nervously restive, that any attempt then to undo the mischief caused by her own folly, was out of the question, and all subsequent appeals and assurances of success being offered in vain, my connection with the case practically ceased. About three years and a half sub-

sequently I was invited to attend the *post-mortem*, and in order that the specimen here shown may prove the more intelligible, as well as instructive, the foregoing outline of its clinical history is submitted.

The uterus, though a large portion had been removed, is still much larger than normal, and its interior is divided into two cavities—the upper and larger one, that of the body proper, and the lower embracing that part of the cervix which is bounded

above by the os internum, and below by an opening so small that a probe is passed from below upward with some difficulty, but less so when introduced from within. (In the diagram the constricted external os does not appear, being situated within the gaping canal representing the circular contraction of the upper third of the vagina.)

It is proper here to state that, though she died from an acute attack of general peritonitis, her medical attendants, Drs. Geo. K. Smith and Van Harlingen, did not consider menstruation in the light of a direct cause, the final appearance of the latter function having passed over with no more than the usual amount of pain and difficulty ten days previous to her fatal attack.

The specimen here presented is one of more than ordinary practical interest, first, because it rarely happens that we are afforded an opportunity, post-mortem, to examine uteri, large portions of which have been excised by or otherwise submitted to the action of the electric cauter. Secondly, I can see in it, and the circumstances connected with its history, one of the strongest negative evidences of the correctness of certain views and opinions, long entertained and often expressed.

The condition of intra-vaginal parts following operations by the electric cauter, and especially of the uterine stump after amputation of the cervix, has been made the subject of remarks from time to time by several members of this Society. Some gentlemen, influenced, probably, by unsatisfactory and perhaps limited experience in the use of galvano cauter, and partly no doubt by having met with one or more examples of great contraction of tissues, even to total occlusion of the os uteri following the operations of other gynæcologists, have pronounced adversely to this method.

Others, again, of large experience in this particular field of uterine surgery, and whose opportunities for accurate observation have been no less extensive, while willing to take into consideration certain plausible statements and *à priori* arguments, were, nevertheless, unable and unwilling to accept conclusions which they believed to be unwarranted and untenable.

Under these circumstances, then, every item in the way of clinical occurrences, and particularly every pathological fact, provided the same be accompanied with a correct history of what was observed to take place in the progress of its development, must be fairly considered and logically disposed of if we would hope to arrive at any reasonably accurate conclusions.

Indeed, without such corroborative aid, abnormal conditions noticed during life are very apt to deceive, and can constitute no sound basis for opinions as influencing practice; while pathological appearances, however striking or suggestive, may be

oftentimes valueless, if not a mischievous incentive to *post hoc* reasoning.

Within the last few weeks Dr. Noeggerath presented a specimen of uterus from which he had, some time previously, excised a large portion of the cervix by galvano-cautery; said operation, however, as in my case, having had no causal connection with the patient's death. It will be remembered by those who had an opportunity to examine that specimen, that the closest inspection of the surface from which the part had been excised failed to show any puckering whatever, or anything to the eye or touch resembling cicatricial tissue. This case was one of great interest as serving to demonstrate the correctness of certain statements and opinions repeatedly expressed by him, and which I would here venture to endorse in the following propositions, namely:

1st.—*That cicatricial contractions, and uterine stenosis, are conditions rarely observed to follow, and never, strictly speaking, as direct consequences of amputation of the cervix uteri by the electric cautery.*

2d.—*That these very troublesome and anomalous states are much less likely to follow amputation of the cervix by this than by any of the other and infinitely more dangerous methods ordinarily resorted to.*

3d.—*That when such difficulties do occur, they are to be considered as due to circumstances and conditions, controllable for the most part, wholly independent of the means employed, and calculated in an equal degree to influence the result of any such surgical proceeding, by whatever means conducted.*

As to the example now before us, it might, at first sight, appear strange and inconsistent on the part of an advocate for galvano-cautery to call attention to a specimen so directly the opposite, in all its pathological features, to that exhibited by Dr. Noeggerath, and one so suggestively at variance with the views and principles set forth in the foregoing propositions.

In this connection I would simply remark that the question is not whether cicatricial deformities after excision of the cervix uteri through the agency of the electric cautery, and serious disturbances and obstructions to menstruation consequent thereon, do or do not occur, for the specimen before us is affirmative evidence of the fact, so that we know and freely admit that such conditions can and do occasionally supervene. But if, in a large experience of many years with this particular agent, both in hospital and private practice, and during which every intra-vaginal operation where it could be judiciously substituted for the knife, scissors, "vitality modifying" escharotics or strong caustic applications, I have employed the electric

cantery, and carefully observed its effects; if, in nearly fifty amputations of the cervix for non-malignant conditions alone, mainly hypertrophy, by this means, I have noticed but four similar to and including the one to which this specimen refers; and finally, if to this I add the statement that the clinical history of that one case, as here given, would apply, in all its main features, to either or all four, I cannot look upon such experience in any other light than that of positive and convincing proof that my conclusions are correct.

I am well aware that when a case of this nature is to be investigated we are confronted, at the very outset, in our search after causal connections, with two prominent and startling circumstances, viz., the operation by galvano-cantery and the specimen before us. It is needless to say, however, that if we proceed to reason from such disjointed materials, a single occurrence and an isolated fact; if, in any case the first and the final links only in a long chain of clinical testimony are to constitute the sole basis of our reasoning, though once in a while, and by the merest accident, our inferences may happen to be correct, the chances are infinitely greater that any conclusions or opinions so reached will be absurd and untenable.

And yet this "rapid transit" style of argument is precisely what we are constantly asked to accept as conclusive. Indeed, the "method" usually adopted, though not in accordance with the modern conception of certain phenomena, is, nevertheless, so attractively easy that a sample of the article may not be out of place here, and in substance, may be expressed thus: "1st. Amputation of the cervix uteri by galvano-cantery produces cicatricial obliteration of the uterine canal and a radical impairment of the menstrual function." 2d. "Interruption to this important physiological process necessarily predisposes to pulmonary tuberculosis." Ergo, in the majority of cases where amputation of the cervix has been performed by electro-cantery instead of the *écraseur*, scalpel, or scissors, the patients die of consumption!"

Had my patient at any time during the last three years of her life consulted any gynæcologist, however skilful and trustworthy in other respects, yet having not only little or no practical experience in electro-cantery—but, as we often find in regard to every department of knowledge, either a correspondingly high estimate of his fitness to sit in judgment, or a total disbelief in its claims and merits—the examination of such a case would hardly fail to have confirmed him in his peculiar notions. Moreover, if, added to this preliminary disqualification on his part, we consider that nine times out of ten every fact and circumstance at all calculated to throw light upon and account for

certain abnormal conditions noticed, had been carefully concealed from him or misrepresented, there can be but little doubt that the unfortunate representative of this "modern surgical innovation" would have fared badly.

Much worse, however, would it have been had the patient sought counsel and relief at the hands of some obscure and unprincipled practitioner; because, whereas in the first instance, a partial consciousness of incompetency, or in legal parlance, "a want of jurisdiction," if no higher motive, might render criticism more guarded; in the latter case, not even such obstacles would be permitted to stand in the way of a free expression of his "opinion." Flattered at the very thought of being deemed competent to pass judgment on matters of which he knew he had no knowledge, practical or otherwise, and thoroughly imbued with a contemptuous disregard for "golden rules," or "codes of ethics," why should he hesitate? Others might think it worth while to put in an appearance of going into details, but as for him, conclusions would be reached by a less circuitous route; as for example, the aforesaid "rapid transit" line. In a word, he would doubtless have promptly declared the case to be one of unwarrantable mutilation.

Need more be said as proof negative of the appositeness of this case and specimen to the main question—namely, *When cicatricial contraction and structural impediments to menstruation are observed after amputation of the cervix by galvano-cautery, are such conditions mainly or at all chargeable to this method of operating?*"

DR. THOMAS gave the history of a case of

BELLADONNA POISONING FROM THE APPLICATION OF THE EXTRACT TO
DILATE A SUPPOSED RIGID OS.

When Dr. Thomas first saw the patient she was in the first stage of labor. The skin was of the color of a lobster, pulse 130, respirations rapid, sighing, and shallow, the pupils widely dilated and the patient much alarmed. She looked as if in the eruptive stage of scarlet fever. The labor had not advanced, and the attending physician, supposing that he had a rigid os to deal with, had painted it around freely with the extract of belladonna.

Dr. Thomas found the os high up and behind and out of the axis of the uterine forces, so that they were all expended upon the anterior uterine wall. He pulled the os down, dilatation rapidly took place, and she was delivered with forceps.

The Secretary, at the request of the President, read a letter

to him from DR. J. B. MATTISON, of Brooklyn, relating to the following case of

ECLAMPSIA IN THE MOTHER TREATED BY HYPODERMIC INJECTION OF MORPHIA, WITH ASPHYXIA AND SUBSEQUENT CONVULSIONS IN THE CHILD.

Mrs. M., æt. 25, primipara, was attacked with parturient pains on the evening of Aug. 17, 1873. Nothing of note occurred until midnight, when she began to complain of severe headache, which increased in intensity until one o'clock A.M., when a well-marked convulsion occurred. As soon as possible $\frac{1}{3}$ gr. of morphia was given hypodermically. * Coma was then nearly complete. At two o'clock she had a second convulsion, severe and prolonged. Again $\frac{1}{2}$ gr. of morphia was injected, and the pulse being full and strong at 96, she was bled 16 oz. The coma was most profound. At four o'clock A.M., she had a third convulsion, and again $\frac{1}{2}$ gr. of morphia was injected and 8 oz. of blood taken. No more convulsions occurred, but the coma was complete until ten o'clock (ten hours), when the patient became conscious.

The labor was completed at six A.M. The child was asphyxiated and remained so nearly an hour, assiduous artificial respiration alone bringing it through. From that time until ten P.M. it passed through nine convulsive seizures, in five of which the respirations diminished until they ceased, and nothing save fluttering pulsation seen in the pericardial region, when the chest, was made convex during artificial respiration, gave token that life was going on. Artificial respiration brought the child out of these dangerous seizures and undoubtedly saved its life.

The Doctor asked: "What caused the convulsions in the mother? Prior to the outset of her severe headache, there was not the slightest indication, so far as I could discover, of the coming eclamptic disorder. No headache, no neuralgia, no gastric trouble, no deficient renal secretion, no albumen in the urine up to the very last day, and no anasarca; the health throughout gestation had been good. Were they caused by acute uræmia; by reflex action, or by—something else?"

Again; and this is the most important query of all, what produced the convulsive disorder in the child? Was it the effect of acute uræmia in the mother? the effect of reflex action causing eclampsia, and the influence thereof propagated to the babe; or was the little one narcotized?

I gave the mother, you will note, hypodermically, $\frac{1}{3} + \frac{1}{2} + \frac{1}{2}$ grs. of morphia within three hours, and five, four, and two hours respectively prior to birth. A veteran practitioner who

saw the babe, declared it opium narcosis. What think you? If so, a point of importance at once arises as to the propriety of morphia hypodermics in ante-partum convulsions, although, of course, if they be imperatively demanded, the welfare of the mother outranks that of the child."

On motion of Dr. Mundé, this subject was made the special topic for discussion at the next meeting.

Stated Meeting, February 6, 1877.

The President, DR. T. G. THOMAS, in the Chair.

DR. PAUL F. MUNDÉ opened the discussion on

THE INFLUENCE ON THE FETUS OF MEDICINES, PARTICULARLY NARCOTICS, ADMINISTERED TO THE MOTHER DURING PREGNANCY AND LABOR,

by reading the following paper:

"For some time past, Mr. President, I have been waiting for an opportunity to bring this topic before the Society. During the past summer, I was called to attend a lady in her second confinement at Long Branch, who had, during that whole pregnancy, been addicted to the use of morphine, having gradually reached the large amount of twelve to sixteen hypodermic syringefuls of Magendie's solution, or twelve to sixteen grains of morphine in the twenty-four hours. There was nothing abnormal about the pregnancy, the voluntary movements of the child being felt with the usual distinctness, although the latter as well as the uterine contour were not accessible to the touch on account of the enormous tympanites existing during the last weeks of gestation. The labor progressed normally, but the contractions were painful and inefficient, and the administration of chloroform, at the imperative wish of the patient, perhaps, retarded them somewhat more. However, the child was finally born after a labor of about twelve hours; was lively, and immediately cried lustily, and appeared to be no worse either for the chloroform or the morphine (several syringefuls of which had been taken as usual, during the night, prior to my arrival at two A.M.; the baby was born at nine A.M.). It was not nursed, as the mother said she had had no milk in her former confinement, but mainly because I thought it decidedly unsafe for the mother, with her opium habit, to nurse her child, although one might have supposed that the latter had become accustomed to the drug. It was given to a wet nurse, thrived finely, and has as yet had no illness of consequence.

I should not have thought much about the peculiar features

of this case, quietly assuming the gradual habituation of the fœtus in utero to the morphine, had I not, during the past fall, found that this very subject of the influence of narcotics on the fœtus had been discussed at a meeting of the Leipzig Obstetrical Society in Feb., 1876, and that the opinions of the members participating in the debate differed both as regards the transmission of narcotics to the fœtus in utero, and the practical deductions to be drawn from recent published investigations. It therefore occurred to me, that it would be interesting to learn the views and experience of the members of this Society on the matter, to the accomplishment of which end, the second question asked by Dr. Mattison at the conclusion of his case reported at the last meeting, presents a fitting opportunity.

The literature of this subject of placental osmosis is exceedingly scanty. The regular text-books on Obstetrics merely give the physiological theories of the placental circulation or gaseous interchange; not one of them refers to the transmission of medicinal agents to the child through the maternal blood. Schroeder alone mentions the investigations of Reitz (*Centralbl. f. d. med. W.*, 41, 1868), who after injecting cinnabar into the blood of a pregnant rabbit, found the red particles of that chemical, in the blood of the fœtus, particularly distinct in the capillaries of the pia mater; S. therefore considers the transmigration of maternal blood cells into the blood of the fœtus easily conceivable.

The older journals contain only investigations on normal placental respiration by Müller, Pflüger, Schwartz, Krahmer, Hecker, Veit, and others, who all leave the question more or less undecided; in those of later date, I have been able to find but five separate papers, all, as it happens, by German authors (of other countries there are absolutely none on record), Gusserow of Zürich, Zweifel of Strasburg (two), Benicke of Berlin, and Fehling of Leipzig. Gusserow¹ injected tincture of iodine and a solution of ferrocyanide of potassium into the stomach of pregnant rabbits, guinea pigs, and dogs, but was unable to find any traces of the drugs in the liquor amnii, or in the urine of the fœtus, even when the dose had been given five days before. On the other hand, he was able to detect iodine in the liquor amnii and in the urine of the new-born infant after administering iodide of potash for some time (about two weeks) to the mother before her delivery.

A discovery which, if confirmed, is likely to prove of great practical importance, was made by Zweifel² in 1874, who, in five cases where chloroform had been inhaled during labor,

¹ *Arch. f. Gyn.* III., 2, 1870.

² *Berl. kl. Woch.*, May, 1874.

found traces of the agent in the placenta and in the urine of the new-born infant, thus showing that that vapor, at least, is rapidly transmitted to the foetus.¹ In a later paper² he reviews the subject of foetal respiration and details the result of a number of experiments made on pregnant rabbits. He opened the abdomen and uterus, shut off the supply of air from the mother, and immediately the foetus began to respire violently. Both the umbilical arteries and the vein became purple in color, and asphyxia supervened. As soon as air was again admitted to the mother the color in the umbilical vessels commenced to grow brighter, and in five seconds the vein was bright red and the foetus made vigorous respiratory movements. He therefore considers that by these experiments 'the proof of the respiration of the foetus through the placenta is conclusively furnished, and that this respiration is subject to exactly the same conditions as that of the animal after birth.'

Benicke³ reported the results of his experiments with salicylic acid to the German Medical Association in 1875. He gave the agent to twenty-five women during labor, and found it in the urine of the children immediately after birth, the shortest time after its administration being forty minutes. He therefore concludes, in contradiction to Gusserow, that the osmosis between the mother and the foetus is an exceedingly active one. Paul Ruge and A. Martin⁴ report precisely the same observation with salicylic, but iodide of potash was found by them only in small quantities after prolonged use of the drug by the mother.

The most instructive, and for our purpose the most practical, paper is that by Fehling,⁵ who details experiments on two rabbits and one dog, into whose jugular vein woorara was injected with the intention of producing the specific effect of the poison on the foetuses. The latter, however, utterly failed to show the influence of the drug, and even those rabbit foetuses, whose mother had been anæsthetized to apnoea with chloroform, persisted in moving actively and respiring freely when the uterus was opened.

Judging from this last experiment, and also from universal practical experience, Fehling concludes that Zweifel's observations on the rapid passage of chloroform into the foetal system are still open to question. As for the placenta, that organ

¹ I find Ch. Hüter reported as having found chloroform in the blood of new-born infants, but no practical deduction seems to have been drawn from this observation, and it apparently passed into oblivion.

² Arch. f. Gyn. IX. 2.

³ Zeitschr. f. Geb. u. Fr. I. 3.

⁴ Ibid. 2.

⁵ Arch. f. Gyn. IX. 2.

he says would first have to be cleared of all maternal blood and coagula before the detection of chloroform in its substance could be considered positive proof of Zweifel's statement.

Probably none of us, who have frequently administered chloroform in obstetric practice, can, if we eliminate operative cases, tedious labors, and all cases where asphyxia would be likely to ensue from the dystocia itself, remember a case where the foetus was the worse for the chloroform. Fehling mentions eleven such cases, and all the children were born in a lively condition, and none had jaundice, as Zweifel reports of his cases.

Scarcely less difficult to determine than the injurious effect on the foetus of chloroform inhalations, according to Fehling, is that of hypodermic injections of morphine, because all the cases in which morphine was used were for that very reason more or less abnormal cases, and the asphyxia of the new-born child might therefore be as well ascribed to the dystocia as to the morphine. Still, Fehling admits that in certain cases where the foetal heart-sounds were perfectly regular and rhythmical, and the child was rapidly and easily extracted with the forceps, its asphyxiated condition might have been due to the administration of morphine to the mother—a supposition confirmed, he thinks, by the presence of hemorrhagic effusion into the brain and medulla oblongata, discovered at the autopsy.

Of sixty-eight cases collected by Fehling from his own observations, in which morphine was administered hypodermically, among those where the labor terminated spontaneously, four children were born dead and six asphyxiated; four other children, three of which were easily delivered by the forceps, and one by podalic extraction for breech presentation, were born alive but died unexpectedly within a few hours after birth, without apparent cause. The cerebral organs of all these children presented the hyperæmic appearance above mentioned. They were all, but one, healthy, vigorous infants; the labors had been easy, and the conviction that the morphine had caused the asphyxia almost involuntarily forced itself upon Fehling; nor do the figures mentioned by Kormann,¹ who was one of the first to recommend hypodermics of morphine in obstetric practice, contradict this opinion, for, although he declares never to have witnessed any injurious effects from the morphine in the foetus or new-born child, he states that of his fifty-four cases, six children were still-born and six died soon after birth.

In the discussion which followed the reading of this paper

¹ Mon. f. Geb., 32.

before the Leipzig Obstetrical Society, Hemming and Ahlfeld mentioned having seen cases in which the morphine undoubtedly proved injurious to the child; Leopold reported a case from his own practice and one by Higginbotham, where morphine was given for some time during pregnancy without injuring the child—a circumstance which was explained by Fehling and Weickert on the ground that the fœtus acquired the opium habit with its mother. Fürst also called attention to the innocuousness to the fœtus of laudanum enemata, given during pregnancy. All the members agreed in recommending caution in hastily ascribing hyperæmia of the brain and meninges, etc., of the child to the use of morphine during labor, as these symptoms are observed after various other modes of death.

All the above investigations clearly show that there exists an active and constant interchange of nutritive and other material between the mother and the fœtus through the medium of the placenta; and that all substances, be they gaseous, dissolved, or otherwise suspended in the maternal blood, pass from the placental sinuses through the double epithelial septum, dividing the maternal from the foetal vessels, into the finest ramifications of the foetal villi and thus into the systemic circulation of the fœtus, who in exchange, in all probability, transmits to the mother a portion, at least, of the effete products of his tissue-changes. The rapidity with which this transmission of maternal substances may occur is almost instantaneous, for, according to Vierordt, the time required for the blood to complete the circuit of the human vascular system is but 23.1 seconds.

Fehling tells us that the easily diffusable substances—those which are most readily taken into the circulation and detected in the excretions of adults, such as the salines, salicylic acid, and chloroform—are also those which are most rapidly transmitted to the fœtus; while others which are more slow in their action on the adult, such as woorara, and probably also morphine, do not so readily pass to the fœtus.

The reason why different observers have not witnessed the same results, some having detected the substance given to the mother in the foetal blood or excretions, and others not, is explained by Fehling on two grounds: The relation of the dividing septum to the fluids in which it is bathed, which, in the one case favors osmosis, in the other retards it; and 2: The quantity of the substance contained in the maternal blood.

On the permeability of the materno-fœtal placental septum by certain substances, and on the amount of the latter contained in the maternal blood, will thus, in a great measure, depend the susceptibility of the fœtus in utero to these substances. To prove, therefore, what drugs and how much of each drug can

be given to the mother to insure its transmission to the foetus, should be the first aim of future investigations on this subject.

We have been told, what would indeed seem most plausible, that the volatile vapor chloroform is readily transferable to the foetus, although the injurious effects one would naturally expect therefrom are by no means apparent, notwithstanding the daily use of the agent in obstetric practice. We have further seen, that there are at least some cases in which asphyxia or death of the foetus, is fairly attributable to the hypodermic administration of morphine to the mother during labor. But there our knowledge of the transmissibility of special medicinal agents ends—if we except a few successful experiments with the iodide of potash—and even as regards chloroform and morphine, there still exists a wide diversity of opinion.

With reference to the influence of medicinal agents on the infant during pregnancy still less can be said, nor is that period for obvious reasons so favorable for therapeutic action on the foetus as, particularly, that of lactation. We all know that by giving the mother tonics and various nutritive medicinal agents we aid in securing a vigorous and healthy offspring; we also know that, by putting a syphilitic mother under specific treatment during her pregnancy, we are preserving the child from premature death, or for a time at least, from venereal disease. But still we do not know why the foetus in utero is not poisoned by a drug given to the mother in a dose adapted to her, it is true, but large enough to be fatal to the child after birth. Of course the explanation is, that the child gradually becomes accustomed to the poison (as doubtless in the cases of Leopold, Higginbotham, and myself); but why was the *first* dose not injurious? How many times have I administered opium and morphine during pregnancy, even to the complete narcotism of the mother; and when questioned by the patient whether the child would not be injured by the drug, have invariably and positively answered No, without having any other ground for my belief than previous experience, and the silence with which this subject is passed over in the text-books! And still it seems as though something definite should be known on this subject; as though some scientific explanation should be given for the immunity of the foetus in utero to opium during pregnancy, while during labor the child appears to become, to some extent, susceptible to the drug, until after birth there is no medicine by which it is more easily or fatally affected.

There must be some difference in the transmission of drugs to the foetus in utero, and to the child after birth, or its nervous organization must be less impressible (to narcotics, at least) before birth. How else could we explain the case quoted in the

"*Annales de Gynécologie*" for August, 1876, where the new-born child of a woman accustomed to the daily use of opium in large quantities—an ounce or more a week—died in a few hours after taking the breast for the first time? But if the foetus in utero is admitted to absorb freely the substances circulating in its mother's blood, what is the difference between that species of absorption and that from the mother's milk?

The immense importance of further elucidating this matter need scarcely be pointed out, covering, as it does, not only the transmission of drugs to the foetus, but also the much more important question of the transmission of the germs of disease: syphilis (Kassowitz¹ says that syphilis cannot be transmitted, from the mother to the foetus, or vice-versa during gestation; that the syphilis-germs do not pass through the materno-foetal septum, and that the child will be syphilitic only if the mother had the disease before impregnation, or the disease emanated from the father alone), variola, morbus maculosus Werlhofii (one case by Dohrn), nephritis (several cases by C. Ruge), malaria, and other maternal affections.

In view of the difficulty attending experimental investigations in this as in other kindred topics, the publication of individual professional experiences is the most ready way of furthering the inquiry, as well as the careful observation of and recording, in all future cases, of the effects on the foetus of any drug given to the mother during pregnancy and labor.

The period of lactation was, by oversight, not included in the subject for discussion, and still the knowledge of the effects of drugs on the foetus through the mother's milk is even of greater practical value than during pregnancy or parturition. Every physician knows that certain drugs act on the nursing child when given to the mother, and therefore draws indications as to their use or avoidance. But a systematic series of investigations has, to my knowledge, never been made as to what remedies pass more or less readily into the mother's milk, in what quantity they do so, and in what amounts they must be given, either to act on the child, if so desired, or not do so, if likely to prove injurious. According to recent investigations by Lewald,¹ iron passes very readily into the milk, as also bismuth, oxide of zinc, lead, arsenic, antimony, iodine and its compounds, quinine and mercury; narcotics and alcohol, he thinks, cannot be eliminated by the milk, which opinion, I am sure, can easily be shown to be incorrect; indeed, the case above mentioned so proves it, as far as opium is concerned.

There would seem to me to be several points specially worthy of investigation in this matter of materno-foetal osmosis, such

¹ *Lyon Médical*, June 20th, 1875.

as, *first*, the influence on the fœtus of the remedies frequently administered to the mother during parturition, principally chloroform, chloral (which has recently been so warmly recommended), opium, belladonna, ergot; *second*, if I may be permitted to hazard a suggestion, the question whether the vaccination of a pregnant woman would not secure her child against variola after its birth; *third*, whether the syphilitic child of a woman who was syphilitic before that child was conceived (Kassowitz), could not be cured of the disease by subjecting the mother to antisymphilitic treatment during lactation; *finally*, whether a child which was not born syphilitic, because its mother did not become infected until after impregnation (also Kassowitz), could be permitted to nurse its syphilitic mother with impunity, if the latter be either specifically treated, or not treated at all, since the transmission of the syphilitic virus through the lacteal secretion, is, I believe, by no means proved."

DR. FORDYCE BARKER made the following remarks:

"MR. PRESIDENT:—I regard the subject which we are discussing this evening as one of great practical importance to all engaged in obstetrical practice, but it is one which up to the present time has received but little attention from writers. A young man, anxious to settle the question, whether it be safe for the fœtus to administer narcotic drugs to women during pregnancy and parturition in such full doses as the condition of the mother would otherwise require, would find but little in obstetrical literature to aid him in deciding the question.

As I understand it, this discussion originated in the report of a most interesting case, read at the last meeting, in which a primipara in labor was seized with convulsions, for the arrest of which one grain and one-third of morphia were introduced hypodermically into the maternal system, within a period of three hours, the first hypodermic injection being five hours, the second four hours, and the third two hours before the birth of the child. The child was asphyxiated at birth, remained so for nearly an hour, during which time artificial respiration was most assiduously kept up. In the subsequent fifteen hours the child had nine convulsive seizures, with arrest of respiration, and

¹ An observation made by a veterinary surgeon, named Silvain, in France, in 1857 (*Résumé de Méd. Vétér., N. Y. Med. Record*, Jan. 1, 1876), would certainly give plausibility to this hypothesis. He vaccinated a number of ewes, several of which were pregnant. On the twentieth day following the operation, a lamb born of one of the vaccinated ewes presented on the inside of the left thigh the three marks which had been made on the mother, at the same place, and on the same leg, when the lamb was yet a fœtus. She had been delivered twelve days after vaccination, and on the twentieth day the pustules were in both, ewe and lamb, in the period of desquamation.

only a fluttering pulsation over the precordial region. The child was only kept alive by artificial respiration. Previous to delivery the mother had three convulsions, but none after the labor was completed. It is a most interesting fact that both mother and child recovered.

The question has arisen whether the convulsions of the child were due to the hypodermic injections of morphia, and naturally there has grown out of this inquiry the larger question as to the influence on the infant of medicine, particularly narcotics, administered to the mother during pregnancy and labor.

Now, in discussing this subject it will be wise for us to inquire what positive knowledge we have which will aid us in answering this question.

The first question which naturally suggests itself in reference to the case reported is, whether opium poisoning will cause convulsions in a young infant. In many works on *Materia Medica*, as for example in the U. S. Dispensatory and in the recent work of Bartholow, convulsions are not mentioned as among the phenomena of opium poisoning. But other writers, as, for example, Pereira, Stillé, and Anstie, do speak of convulsions as a result of opium poisoning. Experiments seem to have demonstrated that in the lower orders of animal life, as in fishes, amphibians, reptiles, and birds—in short, where there is a low degree of brain development—convulsions are the common result of opium poisoning. So also in infants it produces the same result, as clinical observation has abundantly established, while in more advanced life convulsions from this cause are very rare. It is said by some authors, I know not on what evidence the assertion is made, that among certain races of man, who have a low degree of brain development, as the Negro, the Malay, and the Javanese, convulsions are the common result of opium poisoning.

I think, therefore, we must all admit that opium poisoning may cause convulsions in an infant.

Then the next question which is suggested by this discussion is, what maternal influences may be transmitted to the fœtus in utero. I think all will concede that we have abundant evidence that certain diseases are directly communicated from the maternal system to the fœtus, as, for example, the specific exanthemata, small-pox, scarlet fever and measles, and certain specific poisons, as syphilis. Then, also, I believe most fully that emotional causes and mental impressions affecting strongly the maternal system may modify the development and the vitality of the fœtus, even to the extent of destroying life. I could give some striking illustrations of this fact, which have come under my personal observation.

It seems to me that a careful study of the literature of the subject will convince every one, that in no way is the effect of such influence more frequently and demonstrably evident than by convulsions in the new-born infant. Guersant and Blache relate the case of a woman of very irascible temper, especially when pregnant, who lost three of her children shortly after birth by well marked convulsions. Convulsions in the new-born infant are not of rare occurrence when the mother has suffered from eclampsia during labor. Depaul describes one case where the labor proceeded naturally, without any symptom to excite anxiety, until the head began to distend the perineum and appear at the vulva, when the woman was suddenly seized with convulsions and immediately died. The child was delivered living by the forceps, but died some minutes after in convulsions. Prestat, Schmitt, Cazeaux, Hervieux, and many other authors whom I do not at the moment recall, mention cases where the infant after birth has had convulsions like those of the mother. I have published three such cases. In two, the mother had severe convulsions during labor, but recovered. In both, the child was born alive, but died a few hours after birth from convulsions, precisely identical in character with those of the mother. In the third case, the child had three convulsions within two hours after birth, but after this time it did well.

I make this brief allusion to the etiology of convulsions in the new-born infant, only for the purpose of showing that in the case reported there existed a well-known cause for the phenomena in this child after birth; and therefore it seems to me unphilosophical and illogical to ascribe them to a cause which in the literature of our profession has hitherto been unknown to produce such a result, unless we can find in science some explanation why this should be the more probable cause.

It is, then, pertinent to ask whether either clinical observations or experimental investigations have in any way shown that opium or its preparations, introduced into the maternal system, may act injuriously on the fœtus or cause convulsions in the infant after birth. What evidence is there, based on clinical observations, that any drugs administered to the woman will exert their direct specific influence on the fœtus in utero? I suppose it to be an accepted opinion of the profession that blood diseases may be communicated by the maternal to the fœtal system, and, to a certain extent, a vague belief prevails that a specific treatment administered to the mother may act directly in curing the fœtal disease. I think it probable that a large majority of the profession hold the opinion that syphilis in the fœtus is amenable to specific treatment of the mother,

or at least that such specific treatment acts directly on the fœtus. But I think it would be difficult for any one to find any direct evidence of this in the recorded literature on this subject, and from one case which came under my own observation, I have been disposed to call in question the soundness of this belief. A lady who had been married for seven years, but never pregnant, came under my care for uterine disease. A few months subsequently she became pregnant, and at about the full term of gestation gave birth to a dead hydrocephalic child. I found that the child had a very large liver, and, as there was also marked evidence of peritonitis, I expressed to the husband privately my suspicion that the death of the fœtus was due to syphilis. He confessed that at a former period he had been treated for syphilis by Dr. Sturgis. I advised him to again put himself under the care of Dr. Sturgis, and I emphatically urged him to avoid impregnating his wife for some time to come. But only a few months after I found this lady to be in the third month of pregnancy. From this time to the end of gestation she was constantly under anti-syphilitic treatment. She gave birth to a living and apparently healthy child, which a few days after began to have snuffles and lose flesh, and a syphilitic eruption appeared on the face. The child was treated by mercurial inunctions, and is now about three years of age. The health of the mother was good, and she never manifested the slightest symptom of syphilis. In this case, specific treatment of the mother, continued for six months, does not seem to have materially influenced the syphilitic fœtus, which was cured in a comparatively short period by direct treatment after birth.

We know that thousands of women have been kept profoundly under the influence of anæsthetics for hours during labor, and that the infant when born has been as active and lively as if no such agent had been administered to the mother. For more than twenty-five years I have given chloroform to every woman whom I have attended in labor, who has had sufficient pain to require such relief, and I have never had the slightest reason to suspect that the child was in any way affected by the use of this agent. Twenty-one years ago, this coming month, I kept one woman twenty-six hours profoundly and continuously under the influence of chloroform, using in that time three and a half pounds of chloroform—a part of which, of course, was wasted in inhaling from a towel. This lady was a vigorous, plethoric primipara. She was seized one morning, without any premonitory symptoms, with convulsions. This was before hypodermic injections were used in this country. I bled her very largely, but she had two more con-

vulsions before I could procure chloroform; although there were evident threatenings of a recurrence whenever she was allowed to partially come out from under the influence of the anæsthetic, yet she had no return of the convulsions. It was twelve hours after the first, before there were symptoms of approaching labor, and, for reasons which I need not stop to detail now, I did not deem it wise to force labor. She was at last delivered by forceps of a very large, active child, who is now a most clever, promising student of medicine. Since that time I have often kept women in labor, eight, ten, or twelve hours under the influence of chloroform, but I am confident that no child born under such circumstances ever manifested in the slightest degree any effect due to this agent. I am aware that Zweifel, within a year or two, has stated that he has found chloroform in the urine of the new-born infant when the mother had inhaled the vapor during parturition; but the clinical experience of thousands of observers in all parts of the world has so positively demonstrated the innocuousness of this agent upon the fœtus in utero that the observation of Zweifel carries no weight with practical men.

Clinical observations in regard to the effect of opium and its preparations on the fœtus when administered to the mother are much more limited in number and much less conclusive as to their results. More than twenty years ago I was struck by the remark in Pereira's *Materia Medica* that wet nurses and pregnant women must employ opium with great caution, as its use by them may endanger the life of the child. As regards its danger in pregnant women, I especially noticed the remark because I had previously attended a notorious opium-eater twice in her confinements, and I had curiously observed the fact that the children, when born, seemed in no way affected by the mother's habits. Since that time I have attended twice another lady, who had acquired the habit of daily using a very large quantity of McMunn's Elixir. After a terrible struggle she conquered her unfortunate habit, and since then I have attended her in a third confinement, and I was quite unable to distinguish any difference in the children at birth, as regards the influence of the opiate. Pereira, in a foot-note, gives Ramsbotham as his authority for the statement as to the danger to pregnant women from the use of opium. I had the curiosity to look up the passage referred to in Ramsbotham, and I find all he says on this subject is, that he had heard that in a woman, who was accustomed to habitually use opium in large doses, it was observed that her children at birth were dull and stupid.

All will remember that for a time it was almost universally

believed in the profession that the use of opium was contra-indicated and even hazardous in uræmia. For some years I supposed that Dr. Metcalf and myself stood almost alone, in this city, in the opinion that opium was a safe and most important agent in the treatment of uræmic convulsions, but I have since ascertained that at the same time Dr. Loomis and Dr. Lente were equally strong in their convictions on this point. I first made use of the hypodermic injections of morphia in the treatment of puerperal convulsions in the spring of 1859. The patient resided in Brooklyn, and was under the care of the late Dr. Horatio S. Smith. She was supposed to have passed the eighth month of pregnancy, when one evening, without any symptoms which had attracted the notice of her husband, she was suddenly seized with convulsions, and Dr. Smith, whose residence was very near, was called in. I saw her late at night, and she was then in a comatose state, having had three severe convulsions. She was evidently too anæmic to bear venesection, there were no signs of uterine action, and she was too feeble as, we both thought, to bear the shock of labor, and so we made no attempt to bring it on. On careful examination which was made several times, I could not detect the sounds of the foetal heart or the placental bruit, and I therefore was positive that the child was dead. With some hesitation Dr. Smith consented that I should make a hypodermic injection of fifteen minims of a solution of morphia sixteen grains to the ounce of water. Four hours after the first injection, she began to grow restless and there were some convulsive twitchings of the muscles of the face, and the same quantity of morphia was again injected hypodermically. I left her profoundly under the influence of morphia, and perspiring most profusely, with the understanding with Dr. Smith that if she rallied and recovered strength sufficient to render such a course feasible, I should be notified, and we would then bring on labor. I heard nothing of the case until about ten days afterwards, when I received a letter from Dr. Smith saying that our patient had no more convulsions, but after the effects of the morphia passed off, she constantly improved in her general condition, until the day before, when, in an easy labor for a primipara, she gave birth to a healthy living child, and both mother and child were then doing well. With the humor characteristic of the man, Dr. Smith closed his letter by saying, 'Now own up handsomely that you were wrong, for you said the child was dead.'

Since that time, I have, in a considerable number of cases, made use of hypodermic injections of morphia in convulsions occurring before labor, and the child has been born alive, with no symptoms indicating that it had been affected by the

morphia, and there are certainly several physicians in this city who can vouch for this fact. I have never made use of hypodermic injections of morphia in the treatment of convulsions during labor, as I think that I have good reason to prefer the treatment, under these circumstances, which I have elsewhere described. But in convulsions, occurring before and after labor, I believe hypodermic injections of morphia to be often the most effective and useful measure that we can adopt.

All this may be said to be negative evidence, only proving that in some fortunate cases the fœtus is not affected injuriously by large doses of morphia administered to the mother. But then, I ask, have we any positive evidence proving the contrary, viz., that the child has been affected by morphia administered to the mother before delivery? I know of none. I have found none such recorded, neither have I ever heard of any. I know that Dr. Lusk, and others whom I now do not recall, have given morphia hypodermically, in the treatment of convulsions during labor, and the child has been born alive.

Next I would ask, whether any experiments have demonstrated that the fœtus can be affected injuriously by the most powerful agents introduced into the maternal system, except such as interrupt the utero-placental circulation. My friend, Dr. Mundé, has already anticipated me in referring to the experiments of Fehling, published in a recent number of the *Archiv für Gynäkologie*.

I therefore will only briefly refer to some of the results which Dr. Fehling obtained. He introduced into the jugular vein of a pregnant rabbit sufficient curare to completely paralyze the animal, including the nerves of respiration and circulation, but life was supported by a tube in the trachea. After a time, the length of which I do not recollect, he opened the abdomen, and found the young entirely unaffected by this most powerful and rapid of known poisons. In another experiment he chloroformed an animal until there was an entire suspension of respiration, and all reflex action ceased, but artificial respiration was kept up for eighteen minutes. He then opened the abdomen, and the young were found unaffected by the chloroform.

So then, in conclusion, I will ask permission to read the following propositions, which I wrote out before coming here this evening, and which tersely express my convictions on this subject:

1st. There is no evidence which can be accepted in science, that narcotic drugs, administered to the mother, ever produce their *specific* effects on the *fœtus in utero*.

2d. Therefore, such drugs should be used without fear of

their effect on the foetus, whenever they are necessary for the health or the life of the mother."

DR. WM. M. CHAMBERLAIN said¹: "Prof. Gusserow, of Strasburg, in the third volume of the *Archiv für Gynækologie*, carefully considers the subject of the exchanges which pass between the mother and the foetus.

He regards the human ovum, like that of the bird, as comparatively independent, possessing a respiration of its own, deriving oxygen from the placenta as we obtain it from the atmosphere; having a calorific function of its own, whereby its body is some two degrees (F.) warmer than its mother's; and a secretory function, whereby sebum is deposited on the surface in the vernix caseosa, urine in the bladder and in the liquor amnii, and the meconium in the intestines.

He reviews the literature of the subject, which he finds somewhat voluminous, but inconclusive.

He collates cases of maternal poisoning, in which the foetus did not share, and some in which it did; cases in which the child was born with the small-pox, when the mother had not been infected, and cases of twins where one child had variola, and the other was free of it at birth.

He concludes that there is evidence of a certain amount of exchange between the two organisms, but that the details are not well made out.

He therefore institutes a series of experiments, first upon animals, and then upon the human subject, to determine in what time, to what extent, and in what portions of the ovum substances, with which the mother's organism may be impregnated, reappear. These experiments may be summarized as follows:

Three guinea-pigs, at term, were injected with solutions of iodine of such strength that an intense reaction of color appeared promptly in the urine. At the end of an hour they were killed, and neither in the urine or the tissues of the foetus, or the liquor amnii was any iodine reaction to be found.

Three rabbits were injected two, four, and five days successively with iodine in the same way. The reaction, which was very marked in the mother's secretions, could not be found in any part of the ovum. Finally, two pregnant bitches were in like manner treated with ferrocyanide of potash, but no transfer to the pups could be shown.

Proceeding to the human subject, he gives in detail the results of experiments upon fourteen different pregnant women who took iodide of potassium in various amounts, from a

¹ Meeting, Feb. 20th.

scruple to a drachm per day, for periods varying from three days to five weeks before delivery. The results were somewhat various; generally, moderate iodism was induced in the mother, as appeared by the reaction of the urine, and by slight diarrhoea. In no case did he recognize any noxious effect upon the child. The liquor amnii was examined during labor, and the child's urine, when it could be obtained, directly after birth, and before suckling.

These fourteen cases may be divided as follows: In six cases no iodine was found in either. In three cases, the child's bladder being empty, the liquor amnii contained iodine faintly. In four cases the child's urine showed iodine, and the liquor amnii did not. In one case the child's urine contained iodine, and the liquor amnii was lost. The six entirely negative cases were those in which the drug was given for less than a week, or in which its administration was necessarily interrupted. The proper appreciation of the series would seem to be that when the mother's secretions had been for several days impregnated with the drug, it began to appear in those of the child, and the bearing of these experiments upon the question now before us evidently is, that if a salt, so soluble, so diffusible, and so patent in its reactions as iodide of potassium, only very slowly and very slightly affects the system of the child, then an alkaloid like morphia, possessing these properties in a much less degree, and administered only a few hours before delivery, would probably not exercise any dangerous influence upon the fœtus.

My own views upon this subject have probably been much influenced by a case, which I reported to the Society ten years ago, of a woman who throughout gestation, parturition, and lactation took by the mouth an average of twenty grains of the morphia salt every day. The child did not show any appreciable effects."

DR. PEASLEE continued the discussion as follows:

"I had hoped, before taking any part in this discussion, to have heard some argument, or learned some facts, on the affirmative side of this question, since it is one of very great practical importance, and I have always endeavored, during my professional career, not now a short one, not to err in the direction of incautiousness. Meantime, I maintain the negative view of this inquiry, both from *a priori* considerations, and from such facts as I have acquired from my own experience and otherwise.

The two divisions of this inquiry are: 1. Do medicines in general affect the fœtus in utero, by absorption into its blood, when administered to the mother during gestation and during

parturition? 2d. Do narcotics especially affect the fœtus in utero, by such absorption, when given to the mother in the conditions just mentioned?

1. *Of Medicines in General.*—The fœtus in utero is isolated from the mother so far as is possible consistently with its nutrition and development, the maintenance of its temperature, and its protection from injury. To secure the first-mentioned object alone, a constant surface of indirect contact exists after the third month between the mother and the fœtus, viz., that afforded by the placenta, and which corresponds to one-third or less of the internal surface of the uterine cavity. At all other points, the liquor amnii isolates the fœtus from the mother, except so far as, in consequence of its movements, or otherwise, the fœtus may temporarily touch the uterine surface, but without any results requiring to be considered here.

Of this indirect contact of the fœtus with the mother, through the placenta, the immediate results are, (1), the absorption from the mother's blood into that of the fœtus of all the elements, oxygen included, which are required for the development of the latter; and, (2), the elimination from the latter of its carbonic acid gas and its elements from disassimilation into the blood of the mother. For, the fœtus having no vascular connection with her, derives no part from her of its blood as such.

That this absorption of blood-elements is very slowly effected is shown by the fact that, during all the last six months of gestation, only an average of about seven pounds of foetal blood and tissues are developed. Indeed, no less than four, and probably five, layers of tissue are interposed to secure this result between the mother's and the foetal blood: 1st, the comparatively thick walls of the lacunæ, entering into the structure of the maternal portion of the placenta; 2d, a layer of connective tissue (perhaps hypothetical); 3d, a pavement epithelium covering the tufts of the foetal placenta; 4th, a layer of embryonic connective tissue; and, 5th, the walls of the placental vessels, mere capillaries at first, but finally becoming larger and thicker. If to these anatomical facts we add the physiological one, that the blood but slowly circulates through the maternal lacunæ, we easily account for the slowness of absorption from the mother's blood; and understand why those elements alone, probably, enter the blood of the fœtus for which there is a physiological necessity, except certain agents in a gaseous form. We, however, know that certain pathological agents, as the cause of syphilis and of the exanthemata, are transmitted from the mother to the fœtus; but these agencies have no recognized analogy with the action of medicines, and therefore no further

notice of them is required here. It is, however, certain that certain gases, not normally present in the mother's blood, do traverse the intervening tissues and enter that of the foetus. I very generally observe that sulphuric ether administered (in vapor) as an anæsthetic during parturition is given off from the lungs of the new-born for some hours after birth; a fact of which I shall make application farther on. Chloroform thus administered, has also been found in the urine of the new-born child (Zweifel).

A priori, therefore, I think that mere solutions in the mother's blood of abnormal substances, whether medicinal or otherwise, are not absorbed into the foetal blood in any appreciable amount; or if appreciably, a long time is required to produce any effect upon the foetus. Salicylic acid may, however, prove to be an exception to this general proposition (Fehling).

And what are the *facts*? Does any therapist know of a medicine which, administered to the mother during pregnancy for any length of time, will produce diuresis in the foetus, and thus at will increase the amount of the liquor amnii? Does anybody know of a cathartic which, acting from the mother, will expel the meconium from the alimentary canal of the foetus, and then, if continued, produce a diarrhoea, or tenesmus and tormina after the canal is evacuated? And does any practitioner ever hesitate to prescribe diuretics and cathartics during pregnancy, whenever required, from any apprehension of any such effects as I have mentioned? I confess I never have myself.

Dr. Mundé has detailed the experiments of Gusserow and others in the administration during pregnancy of different iodine preparations—since these are remarkable for their facility of absorption; the results being precisely as the preceding view would lead us to expect. For, 1. There was no trace of iodine in the foetal urine, unless the former had been for a long time (several weeks at least) taken by the mother; 2. Only in less than one-half of these cases even could it be detected at all; and, 3. It was never diluted if the drug had been given for less than a week. Finally, only the slightest amount, and never sufficient to produce any characteristic effect, was detected in any instance.

As a general proposition, therefore, I do not believe that medicines in general have any appreciable effect by absorption upon the foetus in utero, even when administered for a considerable length of time (several weeks at least) to the mother; the effects of mercurial treatment of the mother upon a syphilitic foetus, when long continued, being, however, an exception to this

rule. Still less, therefore, do I believe that remedies in general can affect the foetus by absorption when taken by the mother merely during the process of parturition, even though unusually prolonged.

2. *Of Narcotics in Particular.*—Nor do I admit that narcotics especially affect the foetus in utero by absorption when administered to the mother during gestation or parturition. The improbability of their absorption into the foetal blood has already been shown, while considering the general question. I have, however, mentioned as exceptions, sulph. ether, and chloroform, administered anæsthetically, in gaseous (vapor) form, during parturition. But inasmuch as even these are never transmitted to the foetus in amount to produce any injurious or even any apparent effect, far less probable is the assumption that narcotics in solution would be absorbed in quantity to produce appreciable effects. And what are the *facts* of experience here? Does any physician know of a narcotic which, given to the mother, will even put a foetus asleep o' nights, in cases where the mother is kept awake and in distress by too forcible and continuous foetal movements? Does any physician know of any narcotic which can kill the foetus in utero in any doses, without first killing the mother? If such an agent were generally known, not one-half of the children now born alive, would ever see the light. The abortionist's occupation would indeed, be gone, for every woman could herself destroy her offspring in utero, whenever she might choose to do so. The Creator has wisely guarded against such destruction of foetal life by the anatomical and physiological conditions I have already specified. On the other hand, we know that drugs which have a certain reputation for destroying the foetus can never be relied upon to effect that object; and that they not very seldom kill the mother, and apparently without affecting the foetus at all. And when they do effect the object intended they merely excite the uterus to contraction; no appreciable amount, whatever the dose, being absorbed into the foetal blood.¹

I have, therefore, never hesitated to administer narcotics to pregnant women whenever they have needed them, and in such doses and as long as they were required. I have, I think, frequently saved the lives of mothers by this practice, and I have certainly never destroyed a foetus in this way, so far as I suspect or believe. I have arrested puerperal convulsions by full hypodermic injections of morphia, and the children have lived and done well. I have also had cases thus treated in which the

¹ Fehling attempted to destroy the foetus in utero, by injecting woorara into the jugular vein, in two rabbits and a bitch; but with no effect upon the foetus, though the parents were nearly killed.

fœtus was born dead. But I have also had cases of fœtal death, in connection with convulsions, where no narcotics had been administered. All know the danger to the fœtus of a single puerperal convulsion, and consider themselves very fortunate to save it, under any management of the case, if several have occurred. If the attempt has been made to arrest them by the administration of chloroform or ether, no one accuses these agents if the child is born dead; though they are doubtless far more absorbable than other narcotics, for the reason before given; and both should be entirely discontinued in practice if the latter are really injurious to the fœtus in rational doses.

And if the use of narcotics more or less prolonged in pregnancy does not appreciably affect the fœtus in utero, what reason is there for the belief that they may do so, if given in a single dose, or repeated a few times, during the 24 or 48 or even 96 hours of parturition? I perceive none at all. If we assume in advance that every fœtus born dead after the administration of a narcotic in a case of convulsions, is killed by the narcotic, we may doubtless get cases enough to confirm the assumption. But how shall we reconcile with it the far greater number of cases in which the fœtus or the new-born, dies in precisely the same way, so far as can be known, though no narcotic has been given? In conclusion, I will say that I have never avoided the use of an efficient opiate to control excitement and procure sleep when required in tedious labors; and I think I have thus conducted many a case to a natural termination and a safe result for both mother and child, which would otherwise have resulted disastrously to the latter at least. And I have still to acquire the facts substantiating the proposition, that narcotics administered during parturition to the mother, even in doses fatal or nearly so to her, will produce any appreciable *narcotic* effect upon the fœtus in utero. If the mother be kept for hours in a state of coma or semi-asphyxia by a narcotic, the fœtus may be born asphyxiated or even dead. But it is not the absorption of the narcotic which affects the fœtus, but the state of the mother's blood and circulation. Such doings, however, are not contemplated, I suppose, in the question before us."

DR. W. R. GILLETTE detailed his experience in a number of cases as follows:

"That certain narcotics administered to the mother during parturition may affect the fœtus in utero, or the new-born child, has long been a matter of my firm belief. I had considered it a determined point that opium, or its preparations, were danger-

ous agents to the child, when given in sufficient doses to the mother to produce a decided degree of narcotism, as evinced in partial anæsthesia, a contracted pupil, a slowed respiration, and a dusky, darkened facies. From remarks made by members of this Society who are rich in obstetrical experiences, it seems that they are decidedly of the opinion that no such potency exists, and that in pregnancy and parturition opium is as safe an agent to administer, and as free from danger to the unborn infant, as ether or chloroform. In discussing this question, we had better treat it from the stand-point of our personal experiences, cutting loose from all theories or hypotheses which are founded upon the altogether insufficiently understood physiological relations existing between the woman and the foetus in her uterus. The question is one of supreme importance to the profession and the community, and it can only be satisfactorily solved by a recourse to experimental observations, which are at the hand and within the power of every one who practises the obstetric art. As an advance in this direction toward the solution of the question, I submit, with the advice of several members of this Society, some cases which have by their fixed and startling similarity of symptoms still further convinced me that this special narcotic, morphia, *when administered to the degree of producing its physiological phenomena* in the mother, will invariably produce a relative condition of narcotism in the new-born infant.

The first case is that of a physician's wife, whom I was called to attend in confinement some months ago. She had borne one child ten years previously, which she had lost, and she looked upon her present confinement with great delight and hope. The labor was normal in every respect. The vertex presented in the L. O. A. position. The first stage was six hours, and presented nothing abnormal. The second stage, of ten hours' duration, was characterized by vigorous, normal pains, which the patient bore badly. I proposed an anæsthetic, chloroform or ether, but the husband would not permit it, on the ground that his wife had valvular lesion of the heart. I maintained that, granting his position, so much the more reason was there why, by the administration of ether or chloroform, we should relieve voluntary muscular effort and pain, and thereby remove a proportionate degree of strain from the circulation. He insisted upon the hypodermic use of morphia, and administered ten drops. The foetal heart at this time was beating with perfect regularity and frequency.

The injection not having relieved the pain very markedly in half an hour, he administered six drops more. Labor advanced

rapidly, but the patient now slept between pains, and was hardly aroused by some pains at all. The head was advanced to the inferior strait, and then, upon examining the foetal heart sounds, I noticed they were extremely rapid and irregular. I at once proposed forceps, and expressed the opinion that the foetus was dying. This was refused, and in half an hour the child was born easily, but limp, flaccid, with dropped jaws, and making no voluntary or respiratory movement. I immediately separated it from the mother, and commenced efforts for its resuscitation, which were successful to the extent that the child breathed about five times a minute, a shallow, gasping respiration, and the heart fluttered back into a partial existence. I will not recite the further restorative procedures in this case; they were all, the galvanic battery included, kept in operation for three hours, and then the child died, so markedly and typically representing death from opium poisoning, that it could not but be admitted by the father that his practice was wrong. If it were necessary, I could relate two more cases almost identical with this, and where the children were born by easy labors, only to die by the morphia which had been administered to the mother to the degree of partial narcotism. I hasten now, however, to briefly relate some observations that were noted with more care and exactitude, and which from my former experience were hardly necessary for my own belief, but which I am convinced will give the discussion a broader and more active interest. I was assisted in these observations by Dr. Estabrook, a gentleman of experience, to whom I am indebted for his great care and patience.

CASE I.—Aet. 22; primipara, U. S. Was taken in labor 10 P.M., and continued comfortably in the first stage until 4:30 P.M. of the next day, when the second stage fairly commenced and lasted until 7:30 P.M. (3 hours). Labor was normal in every respect, the vertex presenting in L. O. A. position. At 4:30 P.M., Magendie's solution of morphia $\text{m}x$. was given hypodermically. Respirations at this time were 24 per minute, between pains. At 5 P.M., half an hour after, the patient was asleep, respiration between pains 18, pulse 80, full and strong, and pupils contracted down to less than half their normal size. The child was born at 7.30 P.M., did not cry on delivery, made two (2) inspirations during first minute, and became deeply cyanosed. The pulse was full, strong, and 70 per minute. The pupils were contracted to a fine point. Artificial respiration was maintained for 10 minutes, after which voluntary respirations rose to 6 per minute; pulse 90. The child was now left to its own efforts, of course being watched. At 8:15 (three-quarters of an hour after birth), respirations were 28, pulse

126, and the cyanotic appearance which had characterized it nearly gone. The child was asleep, however, and did not wake to cry, during the process of washing. The next day it was strong and well.

CASE II.—Aet. 18; Ireland; primipara. Vertex presenting L. O. A., and labor in every respect normal. First stage twelve hours long; the second, one and a half hour. At commencement of second stage, 10 A.M., gave Mx . Mag. sol. hypodermically. At this time mother's respiration between pains, 28. At 11 A.M., one hour after administration of morphia, respirations 22, pulse 76, full and strong, pupils strongly contracted. Sleeping between pains, and sometimes not aroused by them. Child born at 11:40 A.M., made no attempt at respiration for one minute, then breathed from five to ten times per minute, until 11:50 (ten minutes), when it gave a feeble cry. Pupils contracted strongly, unaffected by light, and surface was cyanosed. Half an hour after delivery, respirations 28, pulse 126, cyanosis nearly gone. At 1 P.M., breathed regularly, but could only be made to cry with difficulty. Its recovery was complete.

CASE III.—Aet. 34; Ireland; second pregnancy. Labor began at 5 P.M.; second stage at 12:15 A.M.; normal in every respect. Respirations 24 (between pains), pulse 70. At 12:30 A.M., gave her hypodermically Mag. sol. Mxi . The patient was crying out bitterly with each pain. At 2:15 A.M., respirations 20, pulse 62; patient was sleeping between pains, and scarcely aroused by them. Pupils contracted strongly. The child was delivered at 2:30 A.M., and during *first five* minutes no attempt at voluntary respiration was made at all. Heart beating 40 per minute. Artificial respiration was maintained twenty minutes, during last ten minutes of which twelve voluntary efforts at respiration were made. At the end of twenty-five minutes the respirations were 28, and pulse 90 per minute. The child was deeply cyanosed, and the pupils so contracted as to be scarcely perceptible. At the end of an hour respirations were 46, somewhat irregular, pulse 120; the child was still asleep, though easily roused. It convalesced perfectly.

CASE IV.—Aet. 23; U. S.; primipara; labor normal in all respects. First stage commenced 5 P.M.; second stage, 3 A.M., following morning, and ended at 4:30 A.M. Gave hypodermically at 3:30 A.M., Mag. sol. Mx ., with effect of reducing respirations 4 per minute, strongly contracting the pupils, and producing sleep, which sometimes continued during pains. Child born at 4:30 A.M., made no voluntary respiration during first three minutes, and required artificial respiration to be maintained fifteen minutes. At the end of this time respirations were but 22, irregular, and pulse 100; pupils very small,

and cyanosis marked. It remained in this condition, and uttered no cry, until two hours after birth. The child refused to nurse from birth, remained cyanosed, respirations irregular, sometimes as high as sixty or seventy per minute, and then falling to twenty or thirty. The pulse averaged about one hundred. On the second day after birth, after remaining in this condition, it went into convulsions and died. On autopsy the only changes found were an intense cerebral congestion, particularly at the base of the brain, and a slight colitis.

CASE V.—Aet. 27; Ireland; primipara; labor normal, commencing 7 A.M.; second stage 8 P.M., and ended 11:10 A.M. Gave Mag. sol. $\mathfrak{M}\mathfrak{x}$. at 9 P.M., which produced marked contraction of the pupils, and sleep; not much effect on the pulse and respiration. Child born at 11:10 P.M., did not breathe for nearly one minute; then respired and gave a feeble cry. After this breathed six times per minute. The pupils were strongly contracted. Respirations, which were kept up artificially, as in all the cases, soon rose to 24, and in half an hour were 44 per minute. The child convalesced.

CASE VI.—Aet. 33; England; fourth child; labor normal; commenced 8 P.M.; second stage, 11:30 P.M., and ended at 1 A.M. (one hour and a half). Gave Mag. sol. $\mathfrak{M}\mathfrak{x}$. at 11:30 P.M., with well-marked narcotic effect, *i.e.*, marked contraction of the pupil, diminished respirations, and sleep between pains, and during same. At 1 A.M. the child was born, uttered no cry, and only respired six times the first minute. The pulse was 90, the pupils contracted markedly, and the surface was cyanosed. At end of half an hour, artificial respiration having been maintained at intervals, the respirations rose to 36, the pulse to 126, and the cyanosis disappeared. It slept unremittingly for two hours, and convalesced perfectly.

It seems hardly necessary to review these cases. There is such a similarity of symptoms pertaining to both mother and child, that no comment is needed. They selected, were all normal labors. The foetal heart sound was invariably taken before the administration of the morphia, and found to be normal in frequency and rhythm. The morphia was administered in doses which *insured an effect*, and this, the cases almost uniformly relate to be slowness of respiration, contraction of the pupils, somnolence, and in some instances anaesthesia during uterine contractions. In no instance was the labor delayed by the morphia; on the contrary, it will be observed that the labors were of average duration and ease. The children were uniformly born in a condition, it seems to me, which in the adult we would recognize as narcotism. The respirations were absent or delayed, and were only revived and maintained by artificial move-

ments. The pupils were contracted, the surface cyanosed, the circulation slowed, and the whole body limp, flaccid, with jaws dropped and eyelids half closed. Their manner of resuscitation in no respect resembled the release from asphyxia which sometimes besets the new-born child. The child asphyxiated from the ordinary accidents of its birth, when once it has been made to fully respire, when once its lungs have taken in oxygen, maintains a rapid and uniform respiratory action, which is almost invariably ushered in with a cry. It needs no further watching. Our cases, however, presented very different clinical phenomena, namely, absence of all tonicity, absent or infrequent respirations, and slow and irregular pulse. They could only be revived and their lives maintained by continued artificial respiration. So depressed were they that it was not considered safe to leave them unwatched until two hours had elapsed. The somnolence, contracted pupils, and continued cyanosis were particularly marked. These are unusual and abnormal phenomena in the neonatus. In my observation the child is not disposed to sleep until one or two hours after its birth. Our narcotized children, however, were very somnolent, even after respiration was restored, and in some instances they slept through the entire process of washing and dressing. It may be thought in objection that the pupils of the new-born child are always contracted. This is not the case; on the contrary, the pupils are usually dilated. This at least is my observation, and I know of no other observations upon this point. We know, in support of this, that the new-born child will gaze with a steadiness at a flame or blaze of light which would dazzle the sight of an adult. There must be less sensibility of the organs of vision at this age, as there is of the nerves presiding over the other special senses.

The whole group of symptoms point, through my interpretation, to the depressing effect of the narcotic upon the cerebro-spinal centres of the child, and it will be remarked, upon carefully noting the above cases, that the more marked the symptoms of narcotism were in the mother, the greater was the degree of depression in the child, and consequently the greater was the difficulty in rallying it.

I have made two observations of the effect of atropine on the neonatus, when administered to the mother in the second stage of labor, which I will also report.

CASE I.—Primipara; age 18. Labor commenced 3 A.M., March 5th. Os uteri fully dilated at 12 M., at which time $\frac{1}{60}$ grain of atropine was given hypodermically. At 1.30 P.M. pupils were slightly dilated, $\frac{1}{60}$ grain was again given hypodermically, with effect of widely dilating pupils, and produc-

ing decided dryness of throat. Labor pains continued very strong, but owing to disproportion between the size of head and pelvis no advance was made, and at 4:30 p.m., the forceps was applied and a living child delivered. Child began to cry vigorously immediately. Pupils were *markedly* dilated in a mere rim of iris, and refused to respond to light.

CASE II.—Multipara; 10th child, age 38. Second stage of labor commenced at 5 p.m., March 5th, when $\frac{1}{48}$ grain of atropine was given hypodermically. Child was born at 5:30 p.m. (one-half hour), at which time pupils of mother were markedly dilated and slight dryness of throat complained of. Pupils of child were not at all dilated, and responded promptly to light.

These cases apparently contradict each other, but it will be noted that in the first case the fœtus was under the influence of the drug (as evidenced by the mother's symptoms) *three* hours; while in the second case it was only under the influence (*via* the mother) thirty minutes. Perhaps this latter fact will explain why the atropia failed in the latter case. It may require a larger time for this especial drug to effect its influence upon the fœtus, or it may require a much larger dose. This latter I think is the case, inasmuch as it is a therapeutical fact that children tolerate a much larger dose of belladonna relatively than adults.

I hope to continue the observations with this agent, and shall take pleasure in reporting the results to the Society.

DR. JACOB thought that Dr. Gillette's fears had caused him to give more weight to these experiments than they deserved. Morphia does not act as a ferment, but is used up in producing its effects on the woman, so that little is left to affect the child. Again, when the one-third of a grain given is diluted in the blood of the woman the proportionate amount which can go to the child is so infinitesimal as not to be capable of affecting it.

The discussion was still farther continued¹ by Dr. WARD, who stated that he had had no experience with morphia, but that he had used chloral in large doses in very many cases of labor, but had never observed any effect on the child.

DR. SKENE said that he had nothing which might be considered as positive evidence on either side. He entertained the belief, however, that morphia, when given hypodermically to the mother, would produce its specific effects on the fœtus in utero.

One case had made a very decided impression on his mind. He was attending a lady who had borne several living children.

¹ At the meeting, March 6th, 1877.

She was very nervous, and the labor was tedious, and finally she became so restless as to be nearly unmanageable, complaining of severe pain in one side of the abdomen whenever a pain came on. He gave 10 m. of morphia solution hypodermically to quiet her. When he gave it he was certain that the child was still alive. The labor was soon ended, but the child was dead. Dr. Skene had read Dr. Mattison's case, and felt sure that that child had suffered from the effects of morphia. Although well aware that morphia given by the mouth or rectum did not affect the child, he was convinced that when thrown suddenly into the circulation by the hypodermic syringe it would affect the foetus. Whether it was possible to destroy the child before killing the mother was another question.

DR. PEASLEE did not see why morphia should produce its effects any more certainly when given by the skin than when given by the mouth. Morphia does not act upon the mother in any case till it has entered her blood, and except that it enters more rapidly, when applied hypodermically, and affects her more promptly, the result is the same. When the mother already experiences a certain measure of effect from morphia the result to her and to the foetus, if any, is, he maintained, the same by whichever of the two methods it was made to enter her circulation.

DR. MUNDÉ agreed with DR. GILLETTE that the pupils of a new-born child are always dilated; that is, larger than those of an adult under the same conditions.

DR. PEASLEE admitted that the pupil was generally not contracted, but knew that it was sometimes contracted when morphia had not been given. He had recently seen a case where a little ether only had been given. The first stage had been very long, the second lasting four hours—on the whole a tedious labor. The child did not breathe at all, and resembled as nearly as possible Dr. Gillette's fourth case. Here he observed the pupils immediately after birth, and they were decidedly contracted. Dr. Peaslee said that if the mother were asphyxiated by morphia the child would certainly be affected, and that by the morphia, but it would not be narcosis, but asphyxia, and that was not the point.

DR. THOMAS said: "In renewing the discussion, gentlemen, which has now occupied the time of three meetings of this Society, allow me to refresh your memories with a statement of its origin, its progress, and its present position.

Four weeks ago Dr. Mattison, of Brooklyn, wrote to several obstetricians of this city, relating to them a case of ante-partum convulsions, in which he had employed morphia hypodermically, and in which the child was born so decidedly asphyxiated that artificial respiration had to be lengthily kept

up to ward off the occurrence of fatal consequences. The chief object of his inquiry was this: Was it possible that the alarming foetal condition was due to the morphia transfused into the maternal blood, or might it be regarded as pretty certain that it was due to causes purely connected with the process of parturition in a woman affected as this one was? Amongst others, I was addressed in reference to the matter, and seeing in it elements of great moment to the interests of the lying-in chamber, I, with Dr. Mattison's consent, brought this communication before you. This was the '*pono et origo argumenti*.' At the meeting at which Dr. Mattison's letter was read, one of our fellows, Dr. Mundé, moved that the subject of discussion for the ensuing meeting should be:

'The Influence on the Infant of Medicines, Particularly Narcotics, Administered to the Mother during Pregnancy and Labor.'

This discussion was opened by Dr. Mundé, who favored us with an exhaustive report of the literature of the subject, chiefly derived from German sources, consisting of experiments in the laboratory and at the bedside. He was followed by Dr. Fordyce Barker, who, drawing upon his large and varied experience, gave us a full recital of his views. These, as you remember, were decidedly opposed to the belief that drugs administered to the mother could affect the foetus in utero, his remarks being ended with a formula proposed for the adoption of the Society embodying this conclusion.

At the informal conversation which succeeded the regular meeting, so decided was the influence exerted on the negative side of the question by the efforts to which I have alluded, that I found myself standing almost alone in the advocacy of the view that narcotics, administered hypodermically to the mother in large dose, would affect the foetus in utero. One member of the Society declared that he had used these drugs, and still used them, even during parturition, without fear; another, that he would not, even in the case of his own wife, hesitate to employ them; and many others, that if such a result could occur it would long ago have been recognized. Dr. Gillette, whose large experience as an obstetric practitioner we all know, alone shared with me the conviction to which I have just now expressed adhesion.

Thus stood the discussion at the end of the first meeting devoted to it, and it was carried over to the next. At this Dr. E. R. Peaslee fully reviewed the subject, and thoroughly treating it both from a physiological and clinical stand-point, came to the conclusion that although certain drugs did pass from the mother to the child when administered for a long time,

those administered for a short period never affected the fœtus in utero. Dr. Peaslee was followed by Dr. Chamberlain, who amplified the reports of experiments by Gusserow upon the pregnant woman, already alluded to by Dr. Mundé. At this point in the discussion a paper was read by Dr. Gillette, whose report of some experiments upon this subject is fresh in your memories. Although impressed with the fact from his past experience that the hypodermic use of morphia upon the parturient woman does affect the fœtus in utero, he was emboldened by the positive convictions which he had heard from men of large experience to try the effect of this mode of medication again, and then reported the results of cases in which its effects had been carefully watched. He was followed by Dr. Jacobi, who endeavored to prove by a resort to mathematical calculations, based upon the proportionate amounts of circulating fluid in mother and fœtus, that the portion distributed to the latter could not be sufficient to materially influence it. This brought us to the end of that meeting, when the discussion was again adjourned to that in which we now take part.

This evening we have had the pleasure of hearing further remarks by Drs. Peaslee, Gillette, Skene, and others, and now as the opinions of members appear to be rendered, and no one offers to continue the discussion, I propose, with your permission, to express my own views in reference to the point at issue.

I think, gentlemen, indeed, I may say that I feel certain that, without a dissenting voice, you will agree with me that at the present moment the question presents itself to us under two aspects.

1st. Is it possible for a drug to pass from the blood of the pregnant woman through the placenta into the blood of the fœtus in utero?

2d. Is there any danger that such a passage from mother to child, during pregnancy or the act of parturition, could exert an injurious influence upon the latter?

The first question need not at all detain us. It is answered by the reports made by Gusserow and others, and reported here by Mundé and Chamberlain. The experiments which have been made put the question entirely at rest in the affirmative. It matters not if in one hundred experiments the substance injected into the maternal blood is *not* discovered in that of the fœtus in ninety-nine cases. If it be so discovered in the hundredth, the question is answered. Not the question of frequency or of probability, mark you, for that does not concern our present inquiry, but merely that of possibility—whatever happens is possible, and that such passage from maternal to fœtal blood happens is abundantly proven.

Now, as to the second question. Remember how this question was excited, bear in mind how the particular fœtus whose case brought it before us was poisoned, if poisoned at all, and I think that you will agree with me that at no time during this discussion would you as a body have felt willing to say to any of the participators in the debate, except Gillette and Skene, 'rem acu tetigesti.' A great deal of negative testimony has been laid before us, numbers of instances in which narcotics have been freely administered by mouth and rectum without observable influence on the fœtus, general deductions from general experience, but who beside these two gentlemen have the power to report to us that they had used morphia hypodermically near or during labor, that they had closely watched the result upon the fœtus, and that no influence had been exerted? Not one! It has been asked to-night, why should morphia administered hypodermically to the pregnant woman more decidedly affect the fœtus in utero than that given by the mouth? For myself I answer, 'I don't know,' but this is the question most germane to our subject: 'Does morphia hypodermically administered to pregnant women exert an injurious influence upon the fœtus?'—not how, nor why, nor how often,—but simply, does it or does it not do so? To this limit the question narrows itself when bereft of all the *entourage* which general discussion throws around it. To this question we may speak with some show of evidence at our disposal; to this I am able alone to speak from personal observation, and to this I shall chiefly confine myself.

I have characterized a good deal of the evidence deduced as "negative evidence." Do not understand me as undervaluing such evidence; a great deal of our knowledge rests upon such. But I do say that, when weighed against positive evidence, it should always be entirely overbalanced. Suppose that the question of the danger of ordinary vaginal injections of warm water was under discussion; you can readily imagine the display of a large amount of evidence scouting the possibility of danger from so simple and common a therapeutic resource. Yet, every man here knows that in very rare cases from this arise uterine colics, and even pelvic peritonitis. The same remark applies to vaccination, passage of the male catheter, lancing the gums of infants, the use of Thudicm's douche, and many other apparently harmless therapeutic measures. Now a thousand instances cited in which they did no harm are of value by themselves; but when opposed by one hundred, in which they unquestionably did great harm, their value vanishes as the mist does before the sun. With all due respect for my able opponents, I feel that they have proven that, as a rule, drugs

(narcotic or others), given cautiously by mouth or rectum, do not affect the foetus in utero as a rule. I admit that this is proven, and were this all the evidence before us I would willingly yield the point at issue; but this is not all. What I have called positive evidence is now to be pitted against this, and it is for you to decide which, 'when weighed in the balance, is found wanting.'

On a point like this no man, unless he has some grounds upon which to base his conviction, has a right to an opinion in opposition to the views which are generally accepted. Let me, therefore, give you a reason for my strong convictions with regard to this matter in the very inception of this discussion. I had obtained enough positive evidence to convince me years ago, and I obtained it in this way:

Some years ago, when the hypodermic syringe was first used here, I conceived the idea that anaesthetics might be given up in labor and hypodermic injections take their place. I proceeded very cautiously at first, giving morphia hypodermically in very much smaller doses than the gentlemen who have previously spoken, and with an entirely different object. I used five drops of Magendie's solution of morphia when the efforts of the uterus were very violent and the woman was in absolute pain—never thinking of the child, my faith in the innocuousness to the woman being perfect. All the labors were natural, and accomplished within a reasonable time. Two of the children delivered were free from any opium influence, but four gave such distinct evidences of it that I was convinced of the possibility of the transmission of morphia thus administered to the foetus in utero. Might not these children have been asphyxiated from other causes? you may ask. I can only express my decided belief that they were narcotized, and leave my evidence in your hands, saying, in conclusion, that in one of the children artificial respiration had to be persevered with for more than an hour before the child could be considered out of danger. Its condition was just that described in one or two of his cases by Dr. Gillette to-night.

Now mark you, gentlemen, during the fifteen years which have elapsed since that time, I have gone on using this means during pregnancy and labor, but I have done so very cautiously. It is always well to know the danger attending the means which we employ for good. Knowing the dangers attending vaccination, the vaginal syringe, the male catheter, and Thudicum's douche, I still employ them all. Knowing their dangers teaches me to avoid the evil while I avail myself of the good that is in them.

Of the effect of morphia given to the mother during preg-

nancy upon the child, I know of little positive evidence. Dr. Skene presents his experience with one case to-night—a healthy woman pregnant with a vigorous child—morphia administered hypodermically for neuralgic pain in the mother—foetal movements soon ceasing, and a still-born child the sequence, though, perhaps, not the consequence, I admit. Over twenty years ago Dr. Ezra R. Pulling, well known to most of you as a careful, conscientious, and capable observer, made a careful clinical study of the foetal heart. Two cases, in which it appeared decidedly affected by narcotics exhibited by the mouth, I here present. That they are by no means conclusive I freely admit; I present them merely for what they are worth.

CASE I.—April 16th, 1855.—B. Nolan, residing at 27 Mulberry Street, about eight and a half months advanced in gestation, applied for relief from facial neuralgia, for which I prescribed a placebo. I found the foetal pulsations two inches below and one and a half inches to the left of the umbilicus unusually strong. Three successive examinations, at intervals of ten minutes, showed an average frequency of 141, the extreme variation being but two beats per minute.

April 21st, five days later, I was sent for, and found her under the influence of a strong narcotic. She had applied to a druggist, who had given her a mixture containing sulph. morphiæ gr. iii., the whole of which she had taken in thirty-six hours. Three examinations, made in the same way as the foregoing, showed the frequency of the foetal pulse to vary from 119 to 124, the average being 122. I may mention that she remained under the influence of the narcotic about eight hours after I was called.

An examination twenty-four hours later showed the foetal pulsations to range from 124 to 128, averaging 126; force about the same as in the preceding observation.

This woman had an easy labor at term. The child was feeble, but ultimately did well. I was unable to hear the foetal heart during labor, not seeing her till near its termination.

CASE II.—June 3d, 1855.—Mrs. Barclay, of 36 Cherry Street, at the commencement of the ninth month of her first pregnancy, complained of “false pains.” The frequency of the foetal pulse was 133. It was most distinct near the median line. I prescribed ten drops of laudanum every sixth hour. On visiting her at the end of twenty-four hours I found that she had so far exceeded my instructions as to take about ninety minims of the tincture, and that she was considerably narcotized. The foetal heart was 118 (single observation).

My notes do not show anything special in reference to her confinement, which occurred at term.

You have before you now in evidence that narcotics sometimes, when administered in large doses to the pregnant woman, affect the foetus in utero, the following cases:

8	by Dr. Gillette,
2	“ Pulling,
1	“ Skene,
4	“ Thomas,
1	“ Mattison.

The doubts attaching to Skene's and Pulling's cases I admit. I cannot admit, so long as I rely upon the evidence of my own senses and my ability to differentiate narcotism from asphyxia, the slightest doubt as regards my own cases; while in Dr. Mattison's case I think we have as strong evidence as could be obtained under the circumstances.

But what are you going to do with Dr. Gillette's cases? He experimented nine times, seven times with morphia and twice with atropia. In all his cases the labors were normal, accomplished in a reasonable time, and without manual or instrumental aid. In every case in which the morphia was used the child showed opium poisoning more or less profoundly. The respiration was slow, the heart-stroke feeble, and the pupil contracted. Dr. Peaslee says contraction of the pupil is often natural to the neonatus. Admitted; but see the effect of atropia—pupil widely dilated, iris scarcely discernible. The second case in which atropia was used was terminated in a half hour after its employment by the forceps.

Were all these results upon the foetus coincidences? If so, the occurrence of such coincidences is more remarkable than that of foetal poisoning by means of the mother's blood. I see but two methods of dealing with these cases; first, to declare that the experimenter has grossly blundered in his deductions; or, second, to admit that if there be any value to be accorded to clinical evidences these cases go to prove that large doses of narcotics, hypodermically administered to the pregnant woman, may affect her child injuriously. It is true that Dr. Peaslee tries to meet these cases by the assertion that the dose was large enough to cause asphyxia in the mothers, and that thus the children were affected. But note the fact that in no solitary case did the respirations go below 18 to the minute. Does that look like dangerous opium poisoning? In my own cases certainly nothing bordering on narcotism happened; the patients did not show to any great extent the effects of the drug, for I sat by the bed and conversed with them, and there were no marked results of the opium visible, the effects simply showing themselves in a diminution of the size of the pupil and the pain. Again, take the case of Dr. Skene, where the

patient was doing perfectly well, and the foetal heart beating. The Doctor uses a hypodermic injection of morphia, and the child, without any assignable cause, dies.

I am perfectly willing to admit the force of the remark of Dr. Peaslee at the last meeting, that where morphia is administered during labor and the child dies, it is not a logical deduction that morphia killed the child. But let us suppose that in a large number of cases in which morphia has been used the child does show distinctly the evidences of opium poisoning, is the deduction still an unwarrantable one?

In conclusion, let me say that although I may appear to speak strongly upon the subject, I have no wish to deal with it in a dogmatic spirit. I do not claim, even with the powerful testimony which has been adduced here by Dr. Gillette, that the matter should be looked upon as entirely settled. But this I do feel, and feel strongly, that with the light which we at present have, this Society should not let its dictum go forth in favor of the negative side of this question; that it cannot, with the evidence now before it, even if it desired to do so, endorse the conclusions arrived at by some of those who have advocated that position."

DR. PEASLEE.—"In regard to the right to form an opinion on this subject, I hold that every one has that right if he has facts on which to base it, however he acquired them—otherwise not. I have the facts of my own experience and that of others, and judge therefrom. Dr. Gillette has added also certain experiments, and these being made known become at once the property of the whole profession, and I, or any one else, can base an opinion upon them with the same right as himself. I noted at the last meeting that I adopted the negative side of this question because I possessed no facts which proved the affirmative to be the true view. And I must now add that with the aid of the experimental facts which Dr. Gillette has adduced, I still adhere to my former position. Dr. Thomas has very truly remarked that one positive fact is worth more than any number of negative ones. But what are the positive facts in Dr. Gillette's investigations, except that he gave the mothers the morphia and the children were born more or less asphyxiated? It is not positively proved that they were asphyxiated by the absorption of the morphia from the mother into the foetal blood. Some may consider this as probable, and Dr. Gillette does so. I do not, since I can account for the condition of the children by a supposition to me much more probable than that. Several substances have been shown to enter the foetal blood from that of the mother, especially ether, chloroform, and salicylic acid, as we have already seen. But in no

- * instance was the amount absorbed sufficient to produce any perceptible effect, injurious or otherwise, upon the foetus. The woorara even did not affect the foetus at all. I am not, therefore, prepared to admit the affirmative of this question till (1) the narcotic is actually detected in the blood or the urine of the new-born, and (2) there are symptoms also in the latter which are clearly due to the morphia detected. Then we shall have something *positive* to base our decision upon, and till then I must wait. Dr. Gillette has had a positive experience, with at best but a doubtful result, so far as this question is concerned. His two experiments with atropine also lead to no positive conclusion as to the question whether that narcotic is absorbed from the mother's blood into that of the foetus.

If the question be whether it be possible to injure the foetus in utero by narcotics given in excessive doses, there can be no difference of opinion. For if the dose kills the mother the foetus will die of course, and if it nearly kills her, the foetus cannot entirely escape injury. I should not myself think of producing the narcotic effects upon the mother during parturition which Dr. Gillette produced. Indeed, in a labor perfectly normal in every respect, I suppose no one of us would administer morphia at all. But with the knowledge I possess up to the present time I should still, as heretofore, prescribe morphia during labor in what I considered a sufficient dose to effect the object I had in view, as already explained in my previous remarks. I should never use it as an anæsthetic during labor, of course."

DR. GILLETTE said: "It has been deemed perfectly safe and proper to use the drug to produce a certain degree of anæsthesia, and it is utterly impossible to produce anæsthesia in a woman in labor with the ordinary dose of five or six drops. In the cases which I report, the drug did not produce any asphyxia at all. I cannot understand a case of asphyxia in which the respirations are not below eighteen in the minute. It is well known that opium, if given under certain circumstances, causes flushing of the surface; and this is not because of any want of oxygenation of the blood, but is the physiological effect of the drug, causing dilatation of the capillaries. I cannot agree with Dr. Peaslee that any effect on the woman could occur, with the doses which I used, sufficient to interfere with oxygenation in the foetus. The oxygenation is peculiar and rapid in the new-born child, and once air is admitted into its lungs the danger is over. It is also noticed that the respiration is uniformly maintained when once simple asphyxia is removed. Now, in these cases of asphyxia, if you choose to call it asphyxia, the respirations were infrequent and came very

slowly. The children were somnolent, the pulse was slow, and they showed every indication of oppression of some nerve centre."

DR. PEASLEE considered that the lividity or leaden color after the use of narcotics is always a sign of imperfect action of the blood, whether the frequency of the respiration be diminished or not.

DR. GREENE: "I think that I speak the feelings of the majority of the members of the Society when I say that we are under a debt to Dr. Gillette for his interesting and valuable paper, with all its information, and I therefore move him a vote of thanks."

DR. PEASLEE remarked: "Though I do not adopt his conclusions, I feel very much obliged to Dr. Gillette for his interesting communication, since there are very few, I think, who would have performed these experiments under the same circumstances."

The motion was unanimously carried.

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Reported by W. H. H. GITHENS, M.D., Secretary.

Stated Meeting December 7th, 1876.

DR. J. L. LUDLOW, *Vice-President, in the Chair.*

DR. W. SAVERY related the histories of two cases of

ABORTION CONSEQUENT ON FATTY DEGENERATION OF THE PLACENTA.

"CASE I.—About the 18th or 20th of July last, I was engaged to attend Mrs. E. F. in confinement, which she anticipated would occur about the 10th of August.

She had been spending some weeks in my neighborhood (her home being in this city), and on account of the oppressive heat had decided to remain out of town till after her delivery.

I visited her on the 21st by appointment, and found her in pretty good spirits, but rather uncomfortable from the pressure of the gravid uterus, and having a frequent desire to empty the bladder, which was never entirely relieved, even after she had just made the effort.

On the 23d I saw her again, and found that her discomfort had increased, and that she was troubled with occasional pains in the back and slight cramps in the limbs. On inquiry, I learned that she had not felt any motion of the child for a long time past—she thought as much as two months.

Her complexion was dull and sallow, pulse rather slow and feeble, skin cool, tongue nearly clean, appetite poor. The patient seemed disinclined to move about much or take sufficient exercise.

Gave her iron and quinine in moderate doses. Continued to visit her daily until the 27th, when, as she appeared to be growing worse instead of better, I called Dr. Duer to see her in consultation. He made a careful vaginal examination, and concluded as a result, what I had already anticipated, viz., the presence of a dead fœtus.

He advised waiting, allowing things to take their course without any attempt to hurry labor by artificial means, and, as the pain and distress had increased, suggested the administration of a suppository containing $\frac{1}{4}$ grain of morphia at bedtime. Next day the pains had become more severe, and on my afternoon visit I found that labor had fairly commenced, and at 6 P.M. the patient was delivered of a fœtus which had evidently been dead for a considerable time. It was about the usual size of a six-months child; the bones of the head were soft and disconnected, and the skin was so macerated that it peeled off from the body and limbs with very gentle handling. The placenta, which I had some trouble in extracting, was of full size for its period of growth, but showed numerous patches all over its uterine surface of fatty deposit.

There could be no doubt that this gradually increasing degeneration of the placental tissue was the cause of the child's death, but that it had not sooner produced this effect seemed remarkable to me in view of the large proportion of diseased and useless surface from which the fœtus should have received its nourishment in a normal condition.

The patient had a tedious recovery. Although there had been no odor about the fœtus and placenta, or at most a very slight one, the lochia soon became very offensive, causing much annoyance to the patient and her attendants, and suggesting to my mind the danger of septicæmia. This apprehension was increased when, a few days after her delivery, she had a slight chill, which was followed by fever, loss of appetite, and abdominal distention and tenderness.

The treatment was supporting and antiseptic, and the diet was carefully attended to, milk-punch, egg-nog, and beef-tea being administered as freely as they could be borne; also

detergent vaginal injections and opium suppositories to induce sleep.

Under these remedies a gradual improvement took place, and on the 24th of August my patient was well enough to be moved to Philadelphia, and thence in a day or two to Atlantic City, having become thoroughly tired of the room and place where she had undergone such a tedious sickness.

I should have mentioned that she has been married a number of years, and is the mother of one child, apparently healthy, which I believe was the only other pregnancy she has known.

At the shore she recuperated rapidly, and when I last heard from her, a couple of weeks ago, was in the enjoyment of her usual health.

Owing to the heat of the weather and press of other engagements, I did not attempt to preserve the specimen.

CASE II.—Mrs. J. K. G., American; aged twenty-seven; sent for me on the evening of November 24, 1876, on account of a sudden hemorrhage from the womb.

She had menstruated for the last time on the 23d of March, and soon after that supposed herself to be pregnant, as she suffered from morning sickness, loss of appetite, and from other usual symptoms.

About the 1st of June she came to my office to consult me about a pain in her back between the shoulders, which seemed to proceed from some spinal irritation, as the area of pain was small, not increased by breathing, and I could not discover any sign of lung trouble. She was pale and miserable, evidently in need of tonics, which I prescribed in the shape of elixir of gentian and tincture of iron.

For the pain in her back I gave her an anodyne liniment, but in a few days she sent me word by her husband that it had done her no good, and she would like to have something more effectual. Accordingly I sent by him a small bottle of cantharidal collodion and a brush, with directions to have a space of two by three inches blistered immediately over the tender spot, and to discontinue the use of her tonic.

This was done with apparently good effect, for I heard no more complaint about the pain.

Some time in the latter part of August, or early in September, I was passing her home and stopped to inquire how she was getting along, as I had not heard anything from her recently. She then informed me that there was great doubt about her being pregnant at all, as she was not increasing any in size, had had no sick stomach for a long time, and was in better health than she had enjoyed for more than a year past.

The tender spot in her back was relieved ever since the application of the blister.

Upon inquiring as to whether she did not at any time feel the motion of the child, she said that she had a very faint reminiscence of having done so, but it appeared to her that she must have dreamed it, as she could fix no date, and now strongly doubted if the sensation was a reality. She asked me whether I did not think it would be well to take some medicine in view of this state of things, but I told her that as long as she was feeling so well it was not necessary and that I would call again in a short time to see her. Two or three times after this, at my convenience, I stopped at her house, and always heard the same report, viz., that she was feeling very well, appetite good, and functions regular, but no motion, no menstrual discharge, and no increase in size.

Having been sent for, as above stated, on the evening of November 24th, about ten o'clock, I found her in bed, somewhat pallid, and very nervous. She stated that whilst sitting quietly in her chair amongst the family, she had felt a gush of liquid, which ran through her clothing and the seat of the chair on to the floor. She thought at first it was from the bladder, as there was no pain whatever, but on discovering that it was blood she managed with difficulty to get up stairs, feeling very weak.

On making a vaginal examination, I could feel nothing but the slightly patulous os uteri, which was not specially sensitive to the touch. And as there was no further hemorrhage, and the patient seemed to need rest, I determined to defer until next day any further proceedings, and left her a mixture of fluid extract of valerian and deodorized laudanum, with ten-drop doses of fluid extract of ergot to be given every two hours through the night. Next morning I found her in much better condition as regards her nervous excitement, and on introducing my finger could plainly feel the amniotic sac distending the os uteri.

She had experienced very little pain through the night, and the loss of blood had been trifling. After about an hour's patient and cautious effort, using only my first and middle fingers as dilators and tractors, I succeeded in delivering the foetus and membranes entire, the placenta following in a few minutes without the cord being severed. It had quite a different appearance from that of a healthy after-birth, being white, solid, and gristly to the finger over the greater part of its surface, with here and there patches of comparatively normal structure. I regret not to have been able to preserve better this mottled characteristic condition—the specimen having been placed first in a solution of creosote of the strength of

f 3 i. to f 3 vi. of water ; afterwards in one of chloral hydrate grs. x. to f 3 i.

Very little loss of blood followed the extrusion of the mass, and the patient did perfectly well, and was down stairs yesterday. She is an industrious, hard-working woman, attending regularly to the duties of a country home, and therefore gets plenty of exercise and fresh air, which I doubt is the case with the other patient, Mrs. F., whose history I have just read you.

Mrs. G. has been twice confined, under my care, of healthy, well-formed children, and the only explanation I have to offer for this disappointment is the general condition of her health at the time of conception, and in the early months of pregnancy, though she informed me herself, a few days ago, that one of the 'wise women' of the neighborhood says that it was undoubtedly caused by the doctor's being so imprudent as to blister her back whilst she was in that delicate situation !

I am glad to say that Mrs. G. herself repudiates this theory, and is willing to accept the one I have indicated above."

DR. WM. GOODELL, on behalf of the Executive Committee of the Centennial Medical Congress, presented to the Society, to be placed in its museum, a pair of forceps, a cranioclast and extractor, and a blunt hook, devised by Prof. Lazarewich, of the University of Kharkoff, Russia. A descriptive volume accompanied the gift.

DR. CURTIN, on behalf of Dr. Comegys Paul, presented to the Society a gilded metal horse-shoe pessary which had been used by the late Prof. Hodge before he had devised the form of instrument which at present bears his name.

DR. GOODELL stated that the widow of our late President, Dr. John S. Parry, had presented to the Society his library, to be so placed as to be useful to the members.

The Secretary announced the receipt of the following books :

From T. Gaillard Thomas, M.D., "A Century of American Medicine."

From the College of Physicians, Vol. IX. of its Transactions.

From Henry Frazer Campbell, M.D., "Blood-Letting in Puerperal Eclampsia," and "Uterine Self-Replacement."

Gazette Medicale D' Orient, for July, August, and September.

From Wm. Goodell, M.D., "The Life and the Writings of Louyse Bourgeois."

From James R. Chadwick, M.D., "A Report on the Libraries of Boston."

Stated Meeting, January 4, 1877.

DR. ELLWOOD WILSON, *Vice-President, in the Chair.*

DEATH OF A FŒTUS CAUSED BY FRIGHT OF THE MOTHER.

DR. WM. H. PARISH exhibited a fœtus weighing eight and a half pounds, whose death had apparently been caused by the fright of the mother from an alarm of fire; she having jumped out of bed and rushed with bare feet into the yard.

PUERPERAL SEPTICÆMIC PYÆMIA.

DR. WM. H. PARISH also exhibited the uterus and appendages and read the following history:

"R. S., æt. 19 years, a domestic, was admitted to the Philadelphia Hospital in November, 1876. She was first placed in the venereal ward. She subsequently was transferred to the lying-in ward. Labor came on December 1st, 1876. At that time there were the remains of a papular syphilide on her person. The child was presenting in the L. O. A. position. At the time she was first seen by the intern who attended her, the bag of waters was protruding through the os. This being dilated to the size of a half-dollar. The borders of the os were very tense and hard. In a few minutes the membranes ruptured spontaneously. The vaginal tube and the genital fissures were undersized. There was also noticed extreme rigidity of vagina and of perineum. The second stage progressed but slowly until the head reached the perineum, which was still unyielding. The uterine contraction became forcible, although all voluntary expulsive efforts were held in abeyance by ether. In a few minutes the head was born, the perineum being lacerated to the sphincter ani muscle. There was also a short superficial laceration, extending from the *meatus urethræ* upward. Ergot was given after the birth of the child, which was of average size. The placenta was soon delivered, when there was a considerable hemorrhage, supposed at the time by Dr. Girvin to be uterine. There was ascertained to be no laceration of the cervix. Water of the temperature of 100° to 110° F. was now injected into the vagina, producing contraction of the uterus and also a cessation of the hemorrhage.

For several days after labor the woman was comfortable, though the discharges were very offensive, necessitating vaginal injections of a solution of carbolic acid. On the fifth day, the lochia almost entirely disappeared. Her temperature was now 105° F., and her pulse 120. She had had a slight chill. There was no abdominal tenderness. The fundus of the uterus reached to within 1½ inches of the umbilicus. There

was slight tympanitis. The secretion of milk was scanty, and later it almost entirely ceased.

On the 7th, I saw her for the first time. Temperature then, 103° F.; pulse, 120. No symptom of peritonitis. The woman seemed apathetic. Diarrhœa had set in, and there was vomiting. Measures were resorted to to control these symptoms, and quin. sulph., gr. xx., were given daily, gr. x. in the morning, and gr. x. at night, and an opiate to secure rest. Whiskey, milk, and beef-tea were also given.

December 14th.—Since last note there have been one or more chills. The temperature has been in the main high, 100° to 105°, though at times falling to the normal. It has been difficult to control the vomiting and diarrhœa. To-day there is a troublesome cough, with bronchial and broncho-vesicular rhales, especially in the left lung. Dry cups were applied to both lungs.

December 16th.—Temperature 101° F. Cough very troublesome. Pain, especially in left thorax and in left shoulder. There is also a bed-sore over the sacrum.

December 25th.—The temperature has been presenting very great irregularity in rise and fall—almost daily, at irregular times, falling to the normal, and again rising to 100°, or even to 105° F. For several days the temperature was taken every two hours. The chills have been recurring at irregular intervals. Mild delirium has at times been present, but no albuminuria was detected. The patient has been gradually failing, and to-day (25th), 5 P.M., died. The temperature just before death was 96° F., though at 4 P.M. it was 103° F. Child living.

Autopsy.—Emaciation marked. In the left pleural cavity there were two pints of purulent fluid. About the left third rib, between the parietal pleura and the chest-wall, there was quite a large abscess that communicated with the left pleural cavity. Six ounces of purulent fluid in the right pleural cavity. In the right lung there were numerous small abscesses. The middle lobe was hepatized, the upper lobe partly so. All these lesions seemed of recent origin.

One kidney weighed six ounces, the other seven.

Liver and spleen congested, but without abscesses. There were no evidences of peritonitis.

The uterus measured 4½ inches. There were no signs of endometritis. The uterine parenchyma seemed friable, and a purulent fluid escaped on section of the uterine sinuses.

There were points of purulent accumulation in the pelvic connective tissue; also a collection of pus about the urethra. In the postero-lateral portion of the vagina there was a laceration about an inch in length. It did not extend into the

rectum, but stopped in the connective tissue, and in this tissue, at this point, was a small collection of pus.

The perineal laceration had partly cicatrized; the rest of its surface presented unhealthy granulations. The blood was liquid, with, however, an ante-mortem heart-clot.

At the time this patient was ill there were no cases of puerperal fever in the hospital.

It would seem probable that the lacerations of perineum and of vagina were the starting-points of the septic and pyæmic poisoning of the blood, while constitutional syphilis may have borne its part in preventing the system from successfully resisting the inroads of the poisons."

DR. J. CHESTON MORRIS read the following history of a

CASE OF RUPTURE OF THE PERINEUM WITH LACERATION OF THE VESTIBULE ANTERIOR TO THE URETHRA.

"I was called Nov. 28th, 1876, to see Mrs. W. P., aged 30, in labor with her second child. The patient, a short, stont-built woman, had been delivered by me of her first child with forceps three years ago. The labor then was tedious, the head having been long delayed at the brim of the pelvis; when it was brought through the superior strait a violent pain drove it almost instantly through the canal and vulva with such force as to throw the forceps, which slipped off, the moment the head was freed, against a bureau, which stood some four feet off. The perineum was badly lacerated through the sphincter ani. Stitches were at once resorted to, and the parts healed perfectly. Having this in remembrance, I determined to avoid such an accident this time if possible; and therefore as soon as the os uteri was sufficiently dilated, I applied the forceps at the superior strait (though not without some difficulty, as the child's head presented rather more transversely than in the first position of the vertex), and used as much force simultaneously with the uterine contractions as I thought justifiable. Having in this manner brought the head (as I thought) well within the superior strait, I disengaged and removed the forceps, and waited. But as there was no satisfactory progress, though the pains continued so severe that the patient urgently demanded ether, I concluded to reapply them, and did so as soon as she was under the anæsthetic. While so doing, I noticed a prolapse of the funis, which was at once replaced. Traction was then carefully but not too rapidly made, and resulted in bringing the head well to the inferior strait, when the forceps were removed and the head passed easily through the vulva. Up to this moment no rupture was seen: a finger was passed in pos-

teriorly to ascertain the condition of the cord, and to aid in bringing down the left shoulder; and a still-born child was brought into the world. Every effort was resorted to for the purpose of resuscitation, but in vain. I persevered in artificial respiration for more than an hour, without any result.

The uterus contracted well, and the after-birth came away readily; and as the mother's condition was good, all my attention was given to the child for some time. When at last I examined her more carefully, I found that the perineum had again given way, and was obliged again to resort to sutures. The rectum was not involved this time; a ragged rent extended on the left side from half an inch anteriorly to the posterior fourchette, just to the verge of the anus, laying bare the sphincter ani and extending upwards about three-fourths of an inch. In about eight hours, the patient not having urinated, I endeavored to pass the catheter, and found to my surprise another fissure just anterior to and on the right side of the meatus urinarius. It was superficial, just passing through the mucous membrane sufficiently to show after careful sponging the muscular fibres of the sphincter of the bladder. I may mention that I uncovered the patient and looked before attempting to pass the catheter, as I was anxious to avoid any strain or possible injury to the sutures; otherwise I might have had difficulty in finding the true meatus, as I convinced myself by experiment. I have never seen such a case before; but am by no means sure that such an accident does not occur more frequently than we are aware of, owing to the repugnance to exposing the patient, except when it is unavoidable; and it is partly for this reason that I have called the attention of the Society to the case. I have also been induced by the discussion of the subject in the Obstetrical Society of Edinburgh (*vide Ed. Med. and Surg. Journal* for April, 1875), to contribute what seems to me a fact of some interest as to the etiology of rupture of the perineum.

I may add that my patient made a rapid and good recovery, and is now only suffering from the loss of blood, which was considerable.

With regard to its mode of causation, it may be observed—

1st. These ruptures were not due to the too rapid descent of the head, and consequent sudden stretching of the soft parts.

2d. They were not due to the use of the forceps, as the latter had been removed before their occurrence, and one of them occurred where no pressure or touch could be made by them.

3d. They occurred on opposite sides, in lines parallel to the axis of the canal, and transverse to the circular fibres.

4th. They are just such as would occur in an insufficiently

elastic glove, through which a hand rather too large endeavors to find its way.

With regard to means to be adopted, therefore, to prevent the recurrence of such an accident, should she again come under my care for delivery, I would endeavor

1st. To relax the soft parts by warm fomentations and poultices to the vulva.

2d. To relieve all spasmodic action by the administration of ether as soon as the pains were well established.

3d. To apply the forceps early (as she has a pelvis somewhat contracted at the brim), and endeavor by moderate, long-continued, but occasionally intermitted pressure, to mould the child's head.

4th. Not to hasten unduly the extrusion of the body of the child."

DR. WM. GOODELL agreed with Dr. Morris as to the cause of this unusual laceration near the meatus urinarius, and referred to analogous cases reported by Winckel. With regard to the complete rupture of the perineum in this case, he wished to thank Dr. Morris for his frankness in relating it. He himself had met, not very long ago, with his first case of complete laceration. The vulva was extremely small, quite infantile, and in spite of every care was torn through the sphincter ani. He had at once introduced sutures of silvered iron wire; but some fruit inadvertently eaten by his patient caused an early movement of the bowels, which snapt every suture. Upon examining the wire he found that, through some chemical action between the two metals, it had become as brittle as hair. By unremitting care he got union of the broken ends of the anal muscle, and control over the alvine evacuations, but the perineum proper did not unite. In four other cases of complete rupture, occurring in the practice of his friends, he had been asked to put in sutures very shortly after the accident. One of these died from puerperal fever, then prevailing in the city. In two the union was perfect. In the fourth a recto-vaginal fistula resulted, which was closed by a second operation. But in this last case, owing to unpardonable imprudence in diet, a very unruly patient had on the third day an attack of cholera morbus, for which an enema of turpentine was administered by her friends. He had operated, both in his own practice and in that of others, for some twenty incomplete lacerations of varying extent. In these he could recall but one failure, and that was in a maniacal patient, who jumped out of bed to throw herself out of the window, and had a desperate struggle with her nurse.

DR. C. A. McCALL spoke of the advisability of immediate operation.

By most operators the alternative is offered of closing the rupture immediately after labor, and thus attempting to secure union by the first intention, or of postponing all measures until the close of lactation, and then obtaining fresh surfaces by paring. In one case in his practice he had operated six weeks after parturition and during lactation, and had secured firm union throughout.

DR. C. H. THOMAS related the history of a case of labor in which by great care he had, in an instrumental delivery, avoided a rupture of the perineum during the passage of the head. But as the patient complained of a burning, smarting pain, he made a careful examination of the vagina, and found two longitudinal fissures of the mucous membrane. These he at first supposed had been caused by the ends of the forceps blades, but when he fitted the latter upon the head of the child he found that this could not have been the cause. He afterwards recounted the incident to the doctor in charge of the lying-in department of the Woman's Hospital. This lady had served as midwife under Carl Braun in 1,300 cases, and had been and is a close observer. She told Dr. Thomas that the accident was a very common one, even when instruments had not been used, as the result of over-distention of the vagina, and was present in a large proportion of all the cases which had come under her observation.

DR. GOODELL preferred the immediate operation, but if this had not been done he waited until after lactation had ceased, so as to avoid the latter drain upon the system during the process of repair, and also to avoid the worry and changes of position consequent upon that function.

DR. MCCALL expressed the opinion that the prolapse of the uterus and vagina, resulting from the loss of support by the perineum, would cause so much distress, both mental and physical, to the patient, and such changes in the size, consistence, and weight of the organ itself, by interfering with involution, as to more than compensate for the objections advanced by Dr. Goodell.

DR. MORRIS mentioned that when he was a student he was taught to operate after the close of lactation, and no other practice existed. But of late years the immediate operation had been introduced and has been surprisingly successful. By the latter course the attempt to obtain union of cicatricial tissue is avoided, and we all know how hard and uncertain that is, and that granulating and suppurating surfaces are always slow to heal. He agreed with Dr. Thomas that lacerations occur more frequently than is supposed, and related the history of a case in which persistent hemorrhage after contraction of the

uterus led to a more thorough examination, which revealed a slight laceration at the posterior commissure. The loss of blood was so great that the patient was almost exsanguine, but he succeeded in stopping the flow by means of dry per-sulphate of iron.

DR. TAYLOR had found that in his experience most cases of laceration united by first intention. In some he used sutures, and in others he had found tying the knees together sufficient.

DR. WILLIAMS gave the history of a case in which a burning and stinging pain was caused by a laceration of the vestibule. The bleeding was free, but union was complete without operative interference. In another instance, in a primipara, a slow labor without instruments resulted in a laceration of the posterior wall of the vagina.

DR. THOMAS had found the lacerations in the case he had narrated to be longitudinal, as if made by the points of the forceps, but that was not possible, as they had been guarded by the head of the child. In another case a rupture of the perineum and lower portion of vagina had been made by the shoulders after the safe extrusion of the head.

DR. GUITERAS mentioned the fact that the ulcers found in the vagina during epidemics of puerperal septicæmia were generally in the posterior median line, and were probably located by lacerations occurring during labor.

The following officers were elected for 1877:

President, DR. JOHN H. PACKARD.

Vice-Presidents, DR. LEWIS D. HARLOW, DR. RICHARD A. CLEEMANN.

Secretary, DR. W. H. H. GITHENS.

Treasurer, DR. D. MURRAY CHESTON.

Curator, DR. W. H. PARISH.

Publication Committee, DR. WM. GOODELL, DR. JOHN H. PACKARD, DR. JAMES V. INGHAM, DR. ROLAND G. CURTIN.

Councillors, DR. H. LENOX HODGE, DR. R. P. HARRIS, DR. CHAS. H. THOMAS, DR. JAMES V. INGHAM.

Stated Meeting, Thursday, February 1, 1877.

The President, DR. JOHN H. PACKARD, *in the Chair*.

RUPTURE OF A UTERUS BY MOLESWORTH'S DILATOR.

DR. ALBERT H. SMITH presented a uterus which had been ruptured at the fundus during dilatation with a Molesworth dilator, and read the following history prepared by one of the attending physicians:

"Mrs. H., aged twenty-six years, was delivered of her third child, December 21, 1875, after a prompt and easy labor. She made a good recovery, but was obliged to resume the care of her family at an early date.

Menstruation occurred in the early part of April, 1876; was not repeated in May. About the first of June, she made complaint of bearing down and weakness, for which rest was enjoined, with the use of tonics and a Hodge pessary.

On the 12th, it was found that she had been having discharges of blood in coagula for three or four days, accompanied with pain as of labor. The os was patulous and the cervical canal filled with shreddy masses having the appearance of deciduous, or even placental tissue.

Rest in bed relieved in a measure the tendency to discharge, but its recurrence followed any exertion. This, together with an apparently enlarged condition of the uterus, confirmed the first impression of an incomplete abortion, and seemed to warrant a dilatation of the os, for the purpose of removing any remaining substance. The attempt was made with Molesworth's dilators, each tube being wrapped about one-half its length, so as to operate upon the cervix only. The os yielded with less ease than is commonly observed after an abortion, but in time became sufficiently open to permit the introduction of the finger. A prominence found near the fundus was supposed to be placental tissue. Under this impression, and with the desire to spare the patient further risk of hemorrhage, or a repetition of manipulations, the No. 3 tube was again introduced and carefully distended. Some resistance was realized in withdrawing it, and on its removal it seemed pouched at the end, as though that part only had been distended. With consternation it was discovered that the uterine wall had been ruptured, so that the finger was brought in direct contact with the lumbar vertebræ. The patient, still partially under the influence of ether, sank into a profound prostration, in which immediate death seemed inevitable. She rallied, however, under vigorous stimulation, and lived nearly four days, passing through the ordinary symptoms of metro-peritonitis."

DR. SMITH had seen the case in consultation on the day after the rupture, when the patient presented all the evidences of approaching death from peritonitis. The accident happened under the hands of two very careful and conscientious practitioners, and the specimen is brought forward, not as the result of carelessness or of reckless trifling with the life of a patient, as the condition which predisposed to the accident could not have been diagnosticated. The specimen was submitted for examination to Dr. J. Gibbons Hunt, who found that the uter-

ine tissue was occupied around the seat of rupture with a sarcomatous mass, about the size of a small walnut. Against this the sudden pouching of the dilator had driven it with so much force that the tissues gave way and the opening into the abdominal cavity followed. The instructive lesson to be drawn from this case is, firstly, the necessity of testing thoroughly, before each insertion, an instrument of such immense dilating power as this possesses, and so likely to do damage if it should give way unexpectedly while in the uterus. Secondly, and especially, the danger of rapid dilatation in cases of unrecognized degeneration of tissue. Here the cervix was soft and healthy. The history of the patient and the careful examination of the uterus led the operator altogether away from the suggestion of malignant disease, or of any morbid growth whatever, and there could scarcely be presented a condition of things apparently more favorable for rapid expansion of the cervix. When we have a means so safe as the sponge-tent, or, in cases of slow dilatation, requiring frequent repetitions of the operation, so perfectly unobjectionable as the sea-tangle, we should certainly hesitate about using such an instrument as Molesworth's, except in cases free from any doubt as to the condition of tissues.

DR. MORRIS considered Molesworth's dilator a most valuable one, but it is not free from objections and imperfections. Having longitudinal folds, and the closed end being unyielding, the tape wrapping can be so arranged as to locate exactly the distending power. In this case the unwrapped portion had been pressed too far into the cavity of the uterus, and had exerted its force on the walls of an organ already undergoing sarcomatous degeneration, and this latter was the real cause of the accident. He preferred air to water as the distending agent.

DR. GOODELL had always felt afraid of Molesworth's dilator, and although possessing one had never used it. He considered that the sarcomatous degeneration had rendered the uterus friable. Probably, in this instance, the bulge of the dilator being partly above the internal os, the instrument had, from its cone-like shape, slipped farther in and pressed against the fundus with a force that the diseased tissues could not resist.

DR. SMITH disclaimed all intention of speaking against the Molesworth dilator. We cannot compare it with Barnes's dilators, because the latter are not applicable to dilatation of a non-gravid uterus, nor of an os uteri long contracted after the expulsion of a foetus in abortion. There is not power enough in the bags to make any appreciable impression during a length of time in which it would be feasible to keep up the use of

the dilator. He had found air entirely inefficient in dilating the tubes, although the syringe was filled several times and its contents forced into the tube. There was also danger, in case of rupture of the instrument, of air finding its way into the uterine sinuses. When using water the dilatation does not begin at the exact point where the wrapping ceases—a margin should always be allowed.

DR. PACKARD considered the explanation by Dr. Goodell of the causation of the accident a very satisfactory one.

DR. ESHLEMAN suggested that if the proximal end of the dilator were wrapped, and the distal extremity introduced only as far as required, such an accident as had been described might be avoided.

DR. LUDLOW asked, what was the intention of the wrapping?

DR. A. H. SMITH quoted the directions accompanying the instrument, that those portions of the tube where dilatation is not desired should be wrapped. The tube should dilate into a uniform cylinder, the extremity being rigid, but in this instance the pouching was the result of an imperfection in the materials; it was not caused, and in fact was limited, by the wrapping.

DR. THOMAS considered the suggestion of Dr. Eshleman, of limited introduction and wrapping the proximal extremity of the tube, a very good idea.

TRANSFUSION SUCCESSFULLY PERFORMED ON A CHILD.

DR. ALBERT H. SMITH presented for Dr. N. Newlin Stokes, of Moorestown, N. J., the following history of a case of transfusion:

MOORESTOWN, 10th month, (October) 28, 1876.

"On the 14th of September I was called to see H. L., aged nine years, a large, well-developed boy, who, as I was informed, had been complaining for two or three weeks of being unusually tired, and had been losing flesh, with loss of appetite, etc. I found him with a slight fever, tender abdomen, and diarrhoea. The next two visits indicated clearly that I had a case of typhoid fever to treat, and until October 1st, nothing unusual occurred to note—a well-developed case of typhoid fever occurring in a previously healthy subject, surrounded by favorable circumstances, I had every reason to suppose I could see through successfully at least by the end of the sixth week.

October 1st.—Visited H. L. this morning; found him as yesterday, except a slight discoloration of his saliva from blood; recommended an astringent wash. Evening visit told clearly that I had a dangerous hemorrhage to contend

with. His nose and gums bled freely, and in addition he was passing blood with his urine. I succeeded in stopping the flow from the nose and gums by Monsel's solution. But it would break out afresh under the least provocation. Every passage of urine contained, as nearly as I could judge, from two to five ounces of blood. Pulse 90.

October 2d.—Hemorrhage continues; pulse higher and weaker. My patient takes milk, beef-tea, iron, and quinine—in addition, is taking 5 grs. gallic acid every three hours, and is at *perfect, absolute* rest; rises in bed under no circumstances whatever.

October 3d.—Hemorrhage continues; darker rather in color, less in quantity.

October 4th.—Called in my friend, Dr. A. H. Smith, of Philadelphia. Our patient no better; weaker, and pulse thready and compressible. Gave him sulphate of iron, 1 gr. every four hours, with 4 grs. of alum in lemon syrup, in place of tinct. of iron; continued gallic acid. He takes nourishment well.

October 5th.—Pulse 106 morning, 110 evening. Hemorrhage continues.

October 6th.—Pulse 114 in morning, 130 evening.

It now became evident to us that our little patient would soon sink unless this hæmaturia could be checked. For, although he took concentrated nourishment freely by the stomach and rectum, together with tonics and astringents, yet they all availed nothing, for he was losing blood faster than he could make it.

We resolved upon the operation of transfusion, and being seconded by most willing and interested parents, sent for our friend, Dr. Joshua G. Allen. He came, October 7th, with the needful apparatus, and succeeded in injecting two and one-half ounces of the father's blood in the median vein of the child's right arm. Strange to say, the next urine passed was *entirely* free from blood. An examination was now made with heat and nitric acid, but no albumen was found in the urine. Pulse 136 morning; 120 evening.

October 8th.—My patient passed a restless night, but with *no* loss of blood. Pulse 135 morning, 120 noon, 130 evening.

October 9th.—This day my hopes of a successful termination of the case received a check, for I found in the morning my patient exceedingly prostrated. Pulse varying from 135 to 144, and barely perceptible at times, and upon turning him blood escaped freely from right nostril. I immediately threw up a spray of Monsel's solution and water, equal parts, which checked it at once. This flow was occasioned by picking his nose, which desire seemed almost irresistible at times. Though

my patient is more prostrated than ever, yet I felt more encouraged from the fact that I had a controllable hemorrhage to deal with. Pulse 135 in the morning, 144 in the evening. Is very drowsy, and passing urine involuntarily; temperature 104° . I should have mentioned that numerous petechial spots appeared on his neck, arms, and feet, varying in size from a silver ten-cent piece to that of a half-dollar. These appeared in the early stage of the bleeding; none after the operation.

October 10th.—Pulse 128; temperature $103\frac{1}{2}^{\circ}$. During this anxious time my patient's stomach held out remarkably well, retaining food at all times, except when rejecting blood that was swallowed. He took milk, beef-tea, injections of beef-essence, and of 20 grains of quinia daily. He also took of the tincture of the ferric chloride twelve drops every four hours.

October 11th.—Pulse 120 morning, 123 afternoon; temperature $101\frac{1}{2}^{\circ}$.

From this time onward a marked improvement was daily perceptible, and in three weeks he came down stairs and was considered well. I report this case as one of great interest, not only showing the great value of transfusion in such cases, but also showing that comparatively a small amount successfully injected may be attended with the most desirable results."

Dr. SMITH felt great interest in this case, having seen the child in consultation with Dr. Stokes before the operation, and assisted in the transfusion. Dr. Stokes drew the blood from the arm of the father. Dr. J. G. Allen prepared it for use, defibrinating it, and injected it through the canula inserted by Dr. Smith into the right median basilic vein. There were several points of interest in the case. • The age of the child, nine years, although not without parallel, was a rare feature. The very sudden stoppage of the oozing from the hemorrhagic surfaces was truly remarkable. From the time of introduction of the blood the oozing from the gums and nostrils stopped absolutely, and the urine voided within an hour, although before the operation it contained a large proportion of blood, at that time had no blood in it, and not a trace of albumen upon careful testing. This remarkable and gratifying result following the use of defibrinated fluid in a child almost in articulo mortis, drained to the last bearable degree of all the coagulable and nutritive elements of the blood, certainly does not confirm the views of Lesser (as translated in the *Boston Medical Journal* of June 26th, 1876, by Dr. Minot), as to the necessity of direct transfusion in cases of purpuric hemorrhage, his opinion being that defibrinated blood could have no influence in arresting transudation from bleeding surfaces, only

being applicable to restoring the nutritive fluid when the drain had been stopped.

An important practical lesson was impressed at one point of this operation. Although the injection was made by Dr. Allen with notable slowness and caution, yet the bulging of the vein from distention was so great and so sudden that it was thought he (Dr. Smith) had failed to get the canula, which was a large adult one, into the opening in the vein, and that a thrombus had been produced by the fluid being driven into the connective tissue. It was thought best for him to remove the canula and make another effort; but even after he had fully satisfied himself that the point had passed at least one and a half inches into the vein, the same effect followed the introduction of the liquid as before, showing then the real character of the trouble. Diminishing greatly the rapidity of injection, no further difficulty occurred. Had they borne in mind the exceeding smallness of calibre of a superficial vein in a young child, and the slowness with which the venous blood traverses the vessels, they might have saved the little patient the pain of a second introduction of the canula.

DR. HODGE called attention to the fact that the urine, which had been collecting in the bladder for two hours before the transfusion was accomplished, and which was passed half an hour afterwards, contained neither blood nor albumen, and asked if the apparent cure may not have been only a coincidence. He mentioned a case of concussion of the brain, in which he had bloody urine, bleeding from the nose, stomach, and bowels, and petechiæ, but which got gradually better without much treatment. In another case the cure was apparently hastened by the internal use of ergot.

DR. A. H. SMITH replied that the oozing from the nose and gums, which could be seen, ceased almost immediately after the transfusion.

DR. ALLEN spoke of the case of Dr. Buchanan, where the oozing from the gums and nostrils diminished gradually after transfusion, becoming completely arrested in a few hours.

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ORIGINAL COMMUNICATIONS.

THE INFLUENCE OF MENSTRUATION, PREGNANCY, AND
MEDICINES ON LACTATION.¹

BY

A. JACOBI, M.D.,

Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, N. Y.

PREGNANCY and lactation are incompatible. It is but a rare occurrence that a woman should have strength and blood in sufficient quantity to sustain herself, a nursling, and an embryo or fœtus besides. Therefore,² as early as 1758, a law was passed in France, according to which wet-nurses had to inform their employers of the occurrence of another conception. Not very rarely will the uterus not be able to resist the persistent mammary irritation kept up by nursing, and the fœtus is expelled. The milk of pregnant women undergoes a certain number of changes. According to N. Davis, the solid constituents decrease, particularly fat, salts, and casein; and the milk assumes the nature of colostrum. The changes brought on by men-

¹ Read before the Obstetrical Society of New York. Mostly from Prof. A. Jacobi: "Die Pflege und Ernährung des Kindes," in Prof. C. Gerhardt's Handbuch der Kinderkrankheiten, vol. i. Tübingen. 1877.

² Ullersperger Pædiotrophie, etc., p. 91.

stration are analogous, according to the same author, although not so complete. Ch. Marchand examined three specimens of milk, one of six days before menstruation, one during menstruation, and one six days after menstruation.

Six Days before Menstruation.

Butter.....	32.24	28.56	37.24
Milk-sugar.....	68.25	69.31	69.75
Casein and albumin	20.20	16.75	18.40
Salts.....	1.90	1.74	1.82
Water.....	877.41	883.64	872.79

During Menstruation.

Butter.....	27.45	30.32	33.15
Milk-sugar.....	65.46	65.15	64.42
Casein and albumin.....	21.34	17.21	19.10
Salts.....	1.98	1.80	1.89
Water.....	883.77	885.52	881.44

Six Days after Menstruation.

Butter.....	29.41	29.24	35.54
Milk-sugar.....	69.15	68.87	68.95
Casein and albumin.....	20.90	16.47	16.27
Salts.....	1.89	1.82	1.72
Water.....	878.65	883.60	877.42

Thus, there is during menstruation, a marked diminution of milk-sugar, a trifling diminution of butter, and a trifling increase of albuminous material.

The above results agree with those obtained by Becquerel and Vernois, who found sugar diminished (40.49 : 43.88), and albuminates and extractive material increased in quantity (47.69 : 38.69). They assert they experience no injury to the infants, nursed by menstruating women.

In general, milk-sugar and albuminous contents appear to keep up a somewhat inverse proportion; while the latter are increased, the former diminishes in quantity.

Besides, from a few observations made, it appears that milk-sugar is always found lessened during the duration of a uterine affection, be it hemorrhage, or catarrh of uterus or vagina.

In addition, there are certainly differences in the condition of the milk, which can be appreciated or estimated, particularly as to size. The milk corpuscles—all of them spherical, refracting light, and enclosed in a membrane consisting of insoluble albuminates—range from 0.00125 to 0.004. Fleischmann di-

vides them in three classes, large, middle-size, and punctiform. The first he found in old women, in protracted lactation, in fevers, and during menstruation.

But still opinions differ as to whether menstruation contraindicates nursing or not. For it is true that there are many observations of colic, vomiting, and acid diarrhœa on the part of the nursling, but just as many of entire euphoria during the menstruation of wet-nurse or mother. It is customary, when menstruation makes its reappearance, either to wean or to change wet-nurses. But in very many cases nursing is persisted in for the purpose to prevent both menstruation and pregnancy. For the functions of the mammary glands on the one hand, and those of the ovaries and uterus on the other, were considered to evolve each other. Such an evolution, however, does not exist. Pregnancy may occur without menstruation, no matter whether lactation is going on or not. I had a patient who never had a child during her married life, for a number of years. When she applied to me, she had not menstruated for ten months. Her uterus appeared rather too large for a normal condition; the uterine sound, introduced for diagnostic purposes, destroyed a two months' fœtus. Nor is this the only case of pregnancy commencing during amenorrhœa. Cases will be met with occasionally in the journals; and would be so more frequently, if practitioners were as anxious to instruct their professional brethren by the mistakes they made, as they are apt to be to benefit them by their successes. During lactation, pregnancy is not infrequent, no matter whether menstruation is regular, or reappeared, or disappeared again. Meanwhile, the secretion of milk may be quite copious, and exhibit no very apparent alterations.

In general, lactation is persisted in, and is dispensed with at the expiration of nine or twelve months. At this time menstruation has usually reappeared and is regular. That length of time is also required to fully re-establish uterus and ovaries without regard to lactation. The advice of the English author, who wanted women to nurse their babies through a period of four years, is therefore but poorly sustained by reasons. His were three. The first was, that the babies were thus fed both well and cheaply—but that mode of feeding would, indeed, be neither good, nor cheap, nor sufficient. His second

reason was that the woman would escape a renewed pregnancy and the domestic misery emanating from the abundance of unwished-for children—which is contrary to the established facts. Thirdly, he urged that procedure for the purpose of preventing over-population. But the real result would be to check over-population by destroying the women through exhaustion and abortion. Schœpf-Merei knew, though, of a case of that kind, where a woman would have swelled the heart of that style of Malthusian with joy and satisfaction. Her twenty-two pregnancies resulted in the existence of one child.

Some time ago Robertson remarked that one-half of the nursing working-women of Manchester, Eng., conceived during lactation; and but a few years ago L. Mayer collected facts concerning the frequency of menstruation during that period. He tabulates 1,285 cases in 395 individuals. Of 1,285 there were 685 who nursed. Of these 685 there were 402 who menstruated after some time. The first menstruation appeared after six weeks in 99 (25 per cent.), after twelve weeks in 46, after four months in 41, of the above number.¹ Menstruation, in his observations, had no injurious influence upon the health of the nurslings. Therefore, the reappearance of menstruation is no indication for either weaning the baby or changing the wet-nurse. There is but one such indication, viz., ill-health of the baby, brought on by the continuation of nursing. For the diminution of the quantity of blood in the maternal organism, or the thorough change in its circulation, *may* result in either quantitative or qualitative alterations of breast-milk. In cases of doubt, the regular use of the scale may decide the question of nursing or weaning by determining the weight of the baby.

Coloring materials are known to enter into and pervade all sorts of tissues, even bones. Milk turns yellow by the eating of *caltha palustris*, saffron, and rhubarb, according to Mosler; red by rhubarb, *opuntia*, *rubia tinctorum*; blue by *myosotis palustris*, *polygonum*, *anchusa*, *equisetum*, according to Schau-

¹ Tilt obtained from his experience the following results: Of 100 women whose menstruation returned during lactation, 45 retained their milk unchanged both in quantity and quality. In eight the quantity diminished, one lost her milk altogether, 24 had a large flow during and 15 after menstruation. In five the percentage of solid constituents decreased.

einstein and Späth. The blue color, which penetrates the milk uniformly, must not be mistaken for the superficial layer of discoloration of milk after a few days' keeping. The latter is of parasitic character (different though from the lactic acid parasite of Hessling), and identical with penicillium glaucum and aniline blue. It extends into the lower layers but gradually, infects, by communication, normal milk, and remains unchanged, though the milk be filtered through three-fold paper. When introduced, the milk thus parasitically infected, is apt to give rise to acute gastritis and enteritis.

Ethereal oils are very apt to enter the milk. But to prove their presence otherwise than by taste or smell is not always easy. For organic chemistry has not even advanced sufficiently to decide whether the very same quinia, which, when given internally, communicates a bitter taste to the milk, is eliminated as quinia or in some other form (Chevallier and Henry). Nor can alcohol, opium, or morphia be discovered with absolute certainty. Still, the occurrence of poisoning through milk is an undoubted fact. An endemic is reported, in Italian and German journals, of an affection from which many people suffered, in the neighborhood of Rome, Italy. The symptoms consisted of vomiting, diarrhoea, intense thirst, and diminution of temperature and pulse. The milk of the goats was suspected; the goats were, however, declared to be in good health by the veterinary surgeon, and on analysis the milk was found free of an organic poison. Attention was then drawn to the food of the goats. On the pasture grounds there were found large quantities of clematis vitalba, conium maculatum, colchicum autumnale, plumbago Europaea. Again, the milk, and the masses brought up by vomiting, were examined and found to contain colchicine. An infant, two days old, died soon after taking the mother's breast for the first time. The coroner of Manchester, Eng., investigated the case, and elicited the fact that the mother was an habitual opium-eater, the amount of the poison swallowed weekly being about an ounce. Dr. Fletcher's testimony went to show that the symptoms with which the infant died were the effects of opium.¹

Anorganic chemistry has succeeded in analyzing with better results, a number of substances having been found in the

¹ Med. Press and Cir. 1876.

secretion of the mammaræ. As far as human milk is concerned, these results are, however, mostly obtained by induction or clinical observations, for very few attempts at a direct chemical examination have been made. Large quantities of milk are required for examination, as a rule; and therefore, goats, sometimes cows, have been used for experiments. Iron is contained in milk, normally; in the ashes of human milk, according to Wilderstein, phosphate of iron 0.21 per cent., somewhat less than in the milk of pigs and cows. It was not, however, found by Harnier and Simon. Other experimenters—Lewald, Marchand, Chevallier and Henry, Rombeau and Roseleur—found soluble salts of iron, when given internally, within a short time in the milk; but they soon disappeared. Bistrow noticed a rapid improvement in the general condition of infants, when the wet-nurses took iron; this, however, is no direct proof by itself, for the mammary elimination of iron, inasmuch as the general improvement of the health of the wet-nurse would explain a better composition of her milk and the thriving of the nursing. Wilderstein's experiments with iron on goat's milk had the result of diminishing the quantity of the milk, but its specific gravity increased and the ashes contained twice the normal amount of iron. The effect was not observed before twenty-four hours had elapsed.

Bismuth was found in the milk by Lewald, Chevallier and Henry, and Marchand; by the first in small, by the second in greater quantities, by the last after a very short time.

Iodide of potassium was experimented with by Lewald. When fifteen grammes were given they proved present after four days. Then twenty-one more were given. The effect was kept up by that dose and did not disappear before seventy-two more hours had passed by. When, after that, iodide of potassium was given, the milk exhibited iodine after four days, and so remained for eleven days. Supported by such facts as these, Levisseur (*Jahrb. f. Kinderheilk. N. F.*, VI. 3, 1873) recommends to treat the wet-nurse with iodide of potassium for syphilis, sulphate of quinia for intermittent neuroses, arsenic for cutaneous secretions in the infant.

Arsenic was found in the milk after seventeen hours. It persisted in passing through the mamma sixty hours.¹

¹ Hertwig asserts that arsenic given a cow for medical purposes in medicinal doses may poison her meat.

Lead and oxide of zinc, probably all other preparations of zinc, pass into the milk. A single dose of one gramme was found in from four to eighteen hours; it disappeared in from fifty to sixty.

Antimony passes into the mamma very easily, and requires caution.

Mercury was not found in the milk by Peligot, Chevallier, Henry, and Harnier. Lewald and Personne proved its presence. O. Kahler examined, by Schneider's electrolytico-chemical method, the milk of three women under treatment with mercurial embrocations, but found no mercury. Thus, the treatment of infants affected with hereditary syphilis through the milk of their wet-nurse is not yet proved rational. My own clinical observations do not recommend the plan at all. The internal administration of mercurials, when persisted in sufficiently, yields very satisfactory results in the usual form of hereditary syphilis, which exhibits its first symptoms between the fifth and ninth weeks. Even the formidable species of syphilis attended with pemphigus in the new-born, may be controlled by subcutaneous injections of the bichloride—care being taken that the solution administered is weaker than that recommended by Lewin.

Carbonate and bicarbonate of potassa, and the sulphates of soda and magnesia pass out through the milk. The vegetable acids of alkaline salts reappear as carbonic acid. Sulphides of alkalis have not been found by Marchand.

Thus, there is any number of opinions and results of researches. Is it that chemistry is so uncertain in its methods of examination, or the reputation of the men who vouch for their results with their names so little reliable, or is the material on which the experiments were made unequal in its composition, or perhaps not quite well known in its physiological constituents?

We shall see that the fault lies very probably in the material on which experimenters tried their skill.

The nature of the albuminates of the milk is by no means settled. Hoppe believes he proved the existence in the milk of an albuminous substance identical with the albumen of the blood serum. There is, according to him, but one difference between casein and the albuminate, viz. : that the former when

treated with caustic potassa, yields sulphide of potassium, a change which does not take place in the latter. The albuminate undergoes its transformation into casein by a fermenting process, produced by lactic acid according to Zahn, by a hypothetical ferment according to Kennerich.

Thus seemingly simple questions cannot yet be answered with absolute certainty. It cannot yet be stated that, or that not, the albumen of the serum of the blood is found in the milk. Still, the conditions of things vary. The walls of the blood-vessels of the mamma are thinner or thicker, more or less permeable, and vaso-motor influences will change circulation and nutrition. Thus there may be cases in which blood serum is simply added—as a transudation—to the secretion of the mammary gland. In other secretions too do we meet with considerable differences, many times without any surprise. By assuming that blood serum is found admixed to milk, we can much better explain the cases of infants influenced by medicines, infections, emotions acting through the milk, than when we look upon milk simply as the result of transformed glandular substance.

For such it is normally. The mammary gland is no filter, through which the serum of the blood, or the solutions of salts, or the transformed foods are rendered accessible to the hungry young. The quality and quantity of milk depends upon the development of the gland. Milk is not the product of the action of the cells; it is the transformed cells, the very organ. Thus the nursing is the veriest carnivorous animal. As long as the epithelium has not undergone a total change, the secretion is not milk, but colostrum, with its large globules. The character of the gland influences the milk, much more than food. The latter influences milk only by building up the gland, the cells of which receive materials of different kind; the principal of which is albumen. Where too large an amount of nitrogenous material is received, compared with carbohydrates, the proportion of albumen destroyed is too large, and the result may be that both the gland and the production of milk decrease. Therefore, the proportion of nitrogen in the food ought not to be disturbed beyond the increased necessity of the secretion. That means, as much as this amounts to the nursing woman requires, as either organic or circulating albu-

men. The circulation of albumen is particularly influenced by the use of water. Thus the favorable influence on the amount and character of the milk by all sorts of beverages, is best understood.

The character of the milk is beautifully illustrated by its chemical composition. Its ashes is tissue ashes, not that of plasma. It contains much potassa and phosphate of lime, but little chloride of sodium.

The question whether medicinal agents will appear in the milk, is not, therefore, of sufficient accuracy, and cannot be answered either affirmatively or negatively, as long as the milk is not of a stable quality. Milk secreted from an insufficient mamma, by a woman not in full health and vigor, by an old woman, by a very young woman, by an anæmic woman, by a convalescent woman who has used up a large portion of her albumen both in circulation and in the tissues, by a woman soon after confinement, by a neurotic woman with frequent vaso-motor disturbances—milk, in fact, which is not exclusively composed of mammary epithelium, and contains admixtures, small or large, of transuded serum, is apt to be impregnated with elements circulating in the blood. The indications on the one hand for permission to nurse, on the other for the administration of medicines to a nursing woman, require, therefore, a greater strictness than is usually conceded, and will have to be modified, if the greatest good is to come from nursing, to the young infant. The good results obtained in many cases by artificial feeding, in preference to nursing, are therefore more than accidental.

The milk, then, is a secretion from the cells, not a transudation from the blood.

The difficulty of influencing the mammary secretion is, however, not equally great under all circumstances. In the first period of lactation, the glandular transformation is not yet accomplished. The secretion is of a different nature. It requires days to exhibit casein. Until then, the protein shows the nature of albumen. At the same time, the percentage of butter and salts is very high indeed, both of which explain the laxative character of colostrum. No less do macroscopic and microscopic observation convey the impression of its not being completed. It is yellowish, thickish, the fat globules are large,

unequal, sticky, and mixed with epithelium almost unchanged. There is less potassa and more soda than in normal milk, approximating it to the chemical character of plasma. Besides, colostrum of the cow has not infrequently been found to contain blood, and to coagulate when being boiled. Thus, colostrum¹ is more like a transudation than a glandular secretion.

	4 weeks before part.	9 days before part.	1 day after part.	2 days after part.
Water.....	945.24	858.55	842.90	867.88
Solids.....	54.76	141.45	157.10	132.12
Albumen.....	29.81	80.73	—	—
Casein.....	—	—	—	21.82
Butter.....	7.07	23.47	—	48.63
Milk-sugar.....	17.27	36.37	—	60.99
Salts.....	4.41	5.45	5.12	3.10

As alluded to before, this colostrum is frequently found with disturbances of the general health, in anaemia, fevers, pregnancy, or advanced age of mother or nurse. It must result in disturbing the health of the nursling, and requires the very greatest attention, inasmuch as transudation may be mixed, at almost any time and in almost any proportions, with the normal mammary secretion.

This, then, has no normal standard, neither chemically nor physiologically. That a mere transudation should contain all sorts of material circulating in the blood plasma, is evident. Therefore, colostrum is apt to transfer to the nursling the liquid constituents of the mother's blood, no matter whether normal or abnormal, beneficial or injurious, organic or anorganic. The reports of infants harmed by the mother's opiate, influenced by her taking mercury, belong, therefore, mostly to the earliest period of lactation. The more normal the mammary secretion, the less danger in this respect. But very few persons are ever in undisturbed health.

Another point is still worthy of a remark. Chemical investigations have been made almost exclusively on the breast-milk of animals. Their results are very various indeed, and still this material is so much more stable than the milk of woman. In her wealth or poverty, idleness or work, rest or worry, emo-

¹ Clemm's Analysis of Colostrum.

tions and thoughts, are a great many causes of changes and differences, not easily met with in the animal, depending upon influences bearing upon either vaso-motor action or material alterations in the circulating blood itself.

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RÉSUMÉ ON INCISION AND DIVISION OF THE CERVIX UTERI
 FOR DYSMENORRŒA AND STERILITY.¹

BY

MONTROSE A. PALLÉN, M.D.,

Professor of Gynecology, University of New York. Surgeon to Charity Hospital, etc., etc.

THE earliest authenticated reference we have to division of
 the cervix uteri is by Mr. John Hall, the husband of Shake-
 speare's daughter Susannah, who sold the original Latin manu-
 script to Mr. Cook, of Warwick, who published a translation of
 Hall's "Select Observations on English Bodies, or Cases both

¹ Read before the New York County Medical Society, May 8, 1877.

Empiricall and Historicall performed on many eminent persons in desperate diseases." From it Cook appropriated *verbatim et literatim* the entire chapter on obstructive dysmenorrhœa, incorporating it in his "Marrow of Chirurgery," published in 1627, in which he speaks of closure of the inner orifice of the womb or os uteri, and states that it was to be opened by gentian root, prepared sponge, and afterwards by the fixation of instruments of silver, ivory, or horn, which were hollow, and these means were infinitely better than incision.

In 1650, Scultetus published in a folio edition of his "Armenta Chirurgica," an engraving of a uterotome, the exact prototype of Simpson's, and as he did not claim it as his invention, the probabilities are that it was figured from some work of a prior date, possibly Albucasis, who lived in the fourteenth century, as Scultetus copied his description of the speculum and so figured it. Albucasis copied from Paulus Eginetus, who copied from Ætius, who compiled from the library of Alexandria, afterwards burned by Omar, A.D. 642.

Henry van Roonhyse published somewhere between 1656 and 1669 his "Medico-Chirurgical Observations," which were "Englished out of Dutch by a careful hand" in 1676, wherein are written some very remarkable chapters on gynecology. The one on "Clausura Uteri" is so unique and full of quaint conceits that it will bear large quotations.

"Proceeding to the third part of our division of the womb, which they call the neck of it—beginning from the inner end of the vagina, and being that space which is from that end of the vagina to the fundus uteri itself—we are to know that this neck is very narrow, and comes to be shut very close, and even so close that a thin stilette will not pass into the bottom of the womb, by which infirmity the womb remains shut, and it is caused by some cold humors, stale seed, or stale menstrua, whereby this neck comes to be swelled together when they are compacted upon it. . . . In some women this neck is so hardened, tapering out, and sunk down, that sometimes I can do them but little good by emollient and discutient fomentations, nor by anointing remedies; but am forced in that case to enlarge it by means of the radix gentiana, medulla sambuci, or even by prepared and dried sponge, having been first moistened in melted white wax and squeezed in a press, to make of it convenient pessaries, according to the exigency of the case, by which means the neck of the womb can be disclosed and widened, and made to have its due purgations. Now, being thus widened, there may easily be inserted in the opening an instrument turned of silver, ivory, or horn, in the

screw fashion, but having one end somewhat thicker than the other, and the upper end being like a great clyster pipe, within turned hollow and pervious, of which I have caused to be made many and of different fashions, some bigger and thicker than others, so I have them in readiness upon occasion.

"The patient may, without any inconvenience, when the said instrument is inserted in the part, carry the same and go about with it, for a constant discharge of the womb. So that it is much better to make use, in this case, of this prepared instrument, whereby it may be constantly entertained, than to hasten the cure by the violence of the knife."

From these writers we may readily deduce the fact that division of the cervix uteri for dysmenorrhœa was not an infrequent operation, but that it was not held in great favor, only being performed as the ultimate resort for relief. The rough handlings, such as recommended and practised by Van Roonhyse, in the present time would be fraught with much metritis and cellulitis; and this testimony leads us to judge that certain countries and times are more prolific than others of these dreaded disorders.

Very little, if any information, is to be gleaned on the subject of dysmenorrhœa from the days of the Dutch surgeon, for a period of more than a century and a half, when Macintosh published his paper on mechanical dilation in 1832. Notwithstanding the very brilliant results obtained by this celebrated Scotchman, it was found that the treatment was so painful, so uncertain, and so slow, that in 1843 Simpson, who was a great classicist, well acquainted with the writings of the ancient Greek, Roman and Arabian physicians, the works of Hall, Cook, Van Roonhyse, Jacobus Primerose and others, reintroduced mechanical dilatation by sponge-tents, copied the uterotomy of Scultetus, and seized Wierus's idea of uterine exploration by means of the sound. Nevertheless, to Sir James Y. Simpson we are indebted for the operation and the popularization of divisions of the cervix uteri, and after more than thirty years of enthusiastic advocacy on the one hand, and equally pertinacious condemnation on the other, it behooves us to carefully weigh the question and to render such a verdict as the evidence will justify. The consideration of dysmenorrhœa, its causes and treatment, necessarily enters into the correct appreciation of the testimony bearing upon the case.

What then is dysmenorrhœa? Strictly speaking, it means

difficult menstruation, and custom has associated it with greater or less pain attending the onset or exit of the menses. Although all dysmenorrhœas are more or less painful, yet all menorrhalias (pain at or about the time of menstruation) are not dysmenorrhœas, if we apply the term strictly. A difficulty exists in the cavity of the uterus, or the canal of the cervix, or in the vagina, and we have an obstruction to the exit of the blood, and dysmenorrhœa takes place; but, if the ovipoint is defective, or some morbid process is going on in the ovary, the tubes, the perimetric connective cellular tissue, the peritoneum, or in the uterus itself, hyperæsthesia of the intra-pelvic generative circle (which may amount to excruciating agony) ensues, and we have an obstruction or retardation to the onset of the menses. This last condition should be defined as *menorrhagia*, and includes the so-called ovarian, congestive and neuralgic forms of dysmenorrhœa.

With this distinction before us, we can readily understand how errors in treatment have arisen, more particularly if we attempt to adhere to any absolute or even approximative standard in size of the canal of the cervix, or diameter of the internal os. The whole gist of the subject is to know what is obstruction to the exit of the menses. No rule can be laid down as to the diameter of the canal of the cervix, and the circumference and diameter of the internal os are variable, entirely depending upon the results of physiological, or pathological formative action, which may be defective or in excess.

This point is well illustrated in those cases where an ordinary Simpson's sound can be passed with ease, and painlessly, through the internal os during the intermenstrual period; but when the mucous membrane is turgid and swollen, and the uterine tissue hypertrophied, just prior to the onset of the menses, a small probe is introduced only with difficulty, and most usually attended with decided pain. From this fact alone, without considering the other causes for variation of calibre, the deduction is clear, that the formulation of a rule for any given standard of size of the cervical canal and internal os is unphilosophical and unphysiological.

The true type of a normal cervical canal and internal os, consists in a comparatively painless and free exit of fluids from the cavity of the uterus, even if the discharges are rapidly ac-

cumulated. The retention of blood, mucus, or any other material sufficiently long to become foreign substances, and thereby arouse reflex contractions, indicates obstruction.

The misapprehension of these perfectly obvious propositions has led to numerous errors in diagnosis, as well as to fatal results in the treatment of obstructive dysmenorrhœa; and, co-added to a misconception of Sir James Y. Simpson's, as well as Dr. J. Marion Sims's rules of procedure, the correctness of a principle, excellent in itself, has been so violated as to induce many very distinguished surgeons and gynecologists to condemn incisions of the cervix as unphilosophical and irrational.

Sir James Y. Simpson,¹ in his fourteenth lecture on diseases of women, with reference to the treatment of dysmenorrhœa by means of intra-uterine bougies, says: "But I very frequently found that when the dilatation was effected mechanically, and whether slowly by sounds, or rapidly by sponge-tents, relapse of the stricture or contraction was very apt to occur after a time, just as so often happens after the treatment of bad stricture of the male urethra by merely dilating instruments. For some years past I have thought that the best and speediest mode of cure is to have recourse at once to dilatation of the os by incising it at both sides." After explaining the mechanism of the operation, the changes occurring in the cervix and canal, Simpson goes on to lay down very explicit directions about the length of the incision and quantity of tissue divided by the metrotome. It will be observed that the sections *through the os internum are not so deep as are generally attributed to him*; and, by those surgeons who have followed his teachings, his statements have been most frequently verified with regard to the immediate and consecutive hemorrhage, the main objection urged against his procedure. To understand him best is to quote him in full: "To make such incisions, you require to introduce this instrument or metrotome *as far as the os internum where the incision begins—at first quite shallow*, and then make it deeper as the instrument is withdrawn, till *at the os externum the cervix is cut across in all its thickness*. An incision of this nature into both sides of the cervix makes its canal wide and pyramidal in form, so as easily to admit the

¹ Clinical Lectures on the Diseases of Women, pp. 250 et seq. D. Appleton & Co., New York. 1873.

finger, and in healing leaves the orifice more like that of a uterus from which an impregnated ovum has been expelled."

These lectures were first published in this country in 1863, collated from the "London Medical Times and Gazette" during the years 1859, '60, and '61. The first operation of this nature was made by Simpson in 1843, upon a lady of high rank, and it was a success, as Sir Charles Locock attended her in her confinement in London within sixteen months, and he wrote Simpson that the "labor had not only gone on quite favorably, but had been remarkably easy for a first confinement."

For fully twenty years, then, Sir James Y. Simpson taught and practised an operation which he believed to be philosophical, and it is hardly probable that a surgeon of his acumen and skill would have imperilled his patients, and blasted his reputation, even if one-fourth of the accidents had taken place which were attributed to cervical divisions in his hands. He recognized the dangers of hemorrhage and pelvic cellulitis, although he attributed less importance to these complications than do the gynæcologists of the immediate present. His apparent indifference to these accidents can be explained only by the very great number of successes obtained, which were wanting in many of his followers, because of inattention to his method of operating, as well as an injudicious selection of cases for operation.

After giving directions for keeping the cervical canal and os externum patulous, Sir James goes on to sum up his views in general upon the results of the operation: "Hemorrhage may sometimes follow division of the cervix, *more particularly if you cut too deeply in the upper portion of it*, where you run the risk by so doing of wounding some of the veins of the plexus uterinus; and it ought always to be guarded against by plugging the vagina immediately after the operation with some pieces of sponge, or by applying a saturated solution of perchloride of iron in glycerine with a brush to the raw surface. In some few instances the hemorrhage is pretty smart, but I have never seen it occur to any very alarming extent. Inflammation may sometimes be set up and spread to the surrounding loose cellular tissue or the pelvic peritoneum; and though this rarely goes on to any dangerous extent, yet you may expect sometimes to meet it, and you must always be prepared to treat.

it, and treat it according to the principles which I have explained in speaking of pelvic inflammations in general. Attended with such rare and slight risks, the operation is a very safe one; and there is only this further to be observed in connection with it, that unless all the fibres are fully divided, there is sometimes a chance of the wound healing too rapidly, and the stricture being reproduced. But, altogether, I believe I am entitled to say that there are few operations in surgery so perfectly simple in their performance, and so entirely satisfactory in their results, as division of the cervix uteri in cases of obstructive dysmenorrhœa and sterility."

However much faith we place in Simpson's statements, for we must believe that he was honest in everything he wrote, yet the opposition to him was so strong, headed by Robert Lee and others, that discredit was thrown upon him, and some few untoward results were seized upon, which have been urged with great skill and ingenuity against his reputation for integrity and truth, as well as his judgment and skill as a surgeon.

An unprejudiced and dispassionate estimate of his statements (more particularly since their collation and republication within the past six years by his nephew and successor, one whom we all think to be the best preserver of his uncle's fair fame, and who ought to know from long and intimate association if he told the truth) leads us to give Sir James Y. Simpson more than the Scotch verdict of untruth "not proven," but a full and frank acknowledgment that his operation was an hundred-fold more valuable than any hitherto known device for the cure of obstructive dysmenorrhœa.

Next to Simpson, chronologically speaking, none can dispute the great advances made by our fellow-townsmen J. Marion Sims, who has had more to do with the moulding of professional sentiment in America than all the rest of her gynecologists, and as such, in these particular operations of division of the cervix, I preferred to let him speak for himself, rather than to present his testimony as seen through my individual judgment. I therefore addressed him the following note and questions:

235 FIFTH AVE., April 2d, 1877.

MY DEAR DR. SIMS—Most of the gynecologists of the United States regard you as the originator and constructor of the present

condition of the surgical department of the science in this country, and they also feel that Europe is likewise much beholden to you in the same field. For these reasons, I beg you to give me the earliest convenient reply to the appended questions, in order that I can lay them before the profession in a *résumé* I am now preparing on a subject peculiarly your own. I refer to the various operations practised by you for obstructive dysmenorrhœa and sterility.

You owe to the world the results of your varied and multiple experience, and the younger and more recent surgeons are particularly entitled to such benefits, as they have been indoctrinated by the teachings enunciated in your "Clinical Notes on Uterine Surgery."

I hope you will be as explicit as possible, as I desire to present this subject in its fullest and most impartial light, hoping thereby to contribute somewhat towards the settlement of a question that is fraught with great interest, and upon which there is by no means a unanimity of opinion.

Very sincerely your friend,
MONTROSE A. PALLAN.

QUESTIONS.

1. In simple stenosis of the cervical canal, how do you operate?
2. What proportion of cases are thereby relieved of the dysmenorrhœa?
3. What proportion are cured of their sterility?
4. What percentage are followed by eversion of the lips, the so-called ectropion of the os?
5. Does your experience warrant you to believe that division of the cervix induces debility of the uterus and consequent abortion?
6. Does division of the cervix often entail cellulitis?
7. What are the procedures you follow in making divisions of the cervix for antelexion?
8. What percentage and what kinds of flexions are benefited or cured by the operation?
9. What is the danger from hemorrhage, and have you frequently encountered it?
10. What is the death rate in consequence of the operation?
11. After twenty years of experience, do you consider the operations of division of the cervix to be entirely justifiable for the relief of obstructive dysmenorrhœa and sterility?
12. Do you perform this operation relatively as often now as you did in your earlier practice?

To these questions, and in reply to my note of the same date Dr. Sims responded as follows:

267 MADISON AVENUE,
NEW YORK, April 15th, 1877.

MY DEAR DR. PALLAN—In answering your questions I could have entered more into detail, but I presume I have said enough for your purpose.

1st Question.—In simple stenosis of the cervical canal, how do you operate?

Answer.—I began to perform this operation in 1856. Never used Simpson's hysterotome. Always used my own instrument, which you will see figured in my *Uterine Surgery*. It is now greatly improved. I performed bilateral incision of the cervix up to the cavity of the uterus.

In 1857 I was in the habit of inserting a leaden tube or plug, an inch and a half long, into the canal of the cervix after incision to keep it open. In 1859 I gave this up and resorted to cotton wet with various styptic solutions—such as alum, tannin, iron, etc. In 1861 I first used a whale-bone, called an applicator, to pass iron-cotton into the cervix, and continued this method, variously modified, till 1872, when I went back to the method first adopted in 1857, but using glass tubes instead of leaden ones. In 1874 I adopted the plan of incising the cervix, then dilating it after incision by a dilator, after the method of Dr. Ball, of Brooklyn, introducing a plug of glass, hard rubber, or aluminium into the cervix and retaining it there with iron-cotton from two to six days, according to circumstances. When the dressing and the plug are removed, whether in two days or more, the operative procedures are at an end. But if removed too early, it may be necessary for a few days to push the end of the index finger into the os tincae to the depth of half an inch daily, to keep it open. It is never necessary to pass the sound after the operation, as I did many years ago, and as is the fashion with some to do now. In 1864 and 1865 I was in the habit of nicking the os tincae with a pair of scissors on each side, previously to passing the blade of the knife into the cervical canal. I have never used the scissors for this purpose since 1865.

2d Question.—What proportion of cases is thereby relieved of the dysmenorrhœa?

Answer.—A very large proportion; but I cannot give you the exact ratio. If the dysmenorrhœa is mechanical, the operation is generally successful. If ovarian or neuralgic, it is partially so.

3d Question.—What proportion are cured of their sterility?

Answer.—I cannot say. The treatment of sterility embraces a larger field of observation than that of dysmenorrhœa.

The treatment of dysmenorrhœa is one thing, that of sterility quite another. The dysmenorrhœa may be cured by operation, without influencing the sterile condition in the least. The great mistake of Simpson and his followers was in supposing that the cure of dysmenorrhœa was the cure of sterility, while it is only a step in the right direction. To show how lamentably this is the fact in New York, I have seen several cases of sterility treated by the most eminent gynecologists here, for periods varying from eight months to three years, when the whole treatment was absolutely useless, because the microscope proved the fault to be wholly with the husband, and not with the wife; and I have seen any number of cases where the spermatozoa entered the cervical canal in great numbers, but were all dead,

showing that the physicians in charge of these cases had made the mistake of supposing that the incision or dilatation of the cervical canal was alone sufficient to remedy the sterile condition, while this depended entirely upon abnormal secretions that killed the zoöspirms.

This subject I have explained in my article on the Microscope in the sterile condition.

4th Question.—What percentage are followed by eversion of the lips, the so-called “ectropion of the os”?

Answer.—I cannot say. The percentage must be very small. I have seen a few cases in England, where the operation is done with Simpson's or Greenhalgh's or Routh's knife. In this country, where the operation is done with my uterotome, or some modification of it, this accident is rare; indeed, almost impossible. But let us suppose for a moment that this eversion of the mucous membrane of the cervix to be of frequent occurrence—say five per cent.; it would be no argument against the operation, because it is proven beyond any doubt that Dr. Emmet's beautiful operation for reconstituting the ruptured cervix, whether the result of labor or operation, is always in skilled hands perfectly successful, and that without the least danger to the patient.

5th Question.—Does your experience warrant you to believe that division of the cervix induces debility of the uterus and consequent abortion?

Answer.—By no means. This question was raised in London by Dr. Gream, and was long ago settled. But let us grant that such a result is possible after this operation. Nothing would be easier than to remedy it in a week's time by Dr. Emmet's operation above alluded to.

6th Question.—Does division of the cervix often entail cellulitis?

Answer.—Pelvic cellulitis may follow any operative procedure on the pelvic organs. It is one of the complications of ovariectomy. It may follow the use of the sound, the introduction of a pessary or a tampon, the application of a solution of the nitrate of silver, nitric acid, or other caustic, the use of the vaginal douche, the removal of a polypus, even of a Nabothian gland; but it is more frequently produced by a sponge or laminaria tent than by anything else, and it may and often does arise spontaneously. I cannot say how frequently it may follow incision of the os. I have observed that it occurs in New York more frequently during the months of February and March than at any other period of the year. Hence, I have for a long time adopted the rule not to operate between the last of January and the 15th of April, if I can avoid it. This rule applies to ovariectomy as well as to incisions of the cervix uteri.

Dr. Whitwell, House Surgeon to the Woman's Hospital in 1874, informed me that I had incised the cervix there, in about twelve months of actual service, seventy-five times, and that pelvic cellulitis followed but once. In this case the dressing slipped out of the cervical canal too soon. As a consequence, I feared the operation

might fail, and that it might be necessary to repeat it at some future time. To guard against this, about the fifth day after the operation I passed the sound once into the cervical canal, according to the plan now advocated by Dr. Emmet and Dr. Peaslee, and practised by me and discarded eighteen years ago. The passage of the sound in this case, as it often does in others, produced great pain, and was followed by a chill and an attack of pelvic cellulitis, which confined my patient to her bed for several weeks.

This was the only time I had used the sound for this purpose for many years.

7th Question.—What are the procedures you follow in making divisions of the cervix for ante flexion?

Answer.—If the cervix projects into the vagina normally—that is, if the cervix is normal in its development and points to the posterior wall of the vagina, while the flexure is only at the os internum, then the cervix should be incised bilaterally up to the os internum, and the blade of the knife should then be passed into the cavity of the uterus, and as it is drawn out the os internum should be incised anteriorly. Afterwards the dilator should be used till the canal is of sufficient size to admit the cervical plug, which is to be retained in situ, as before stated, by a tampon.

But if the flexure is at, or near, or below the insertion of the vagina, if the intravaginal portion of the cervix is unequally developed, the posterior segment being much longer than the anterior, with the os tincæ pointing in the direction of the long axis or outlet of the vagina, then there is but one method of procedure, viz., to split the posterior lip of the cervix back, almost, or quite to the insertion of the posterior cul-de-sac on the cervix, and then to pass the blade of the knife into the cavity of the uterus and proceed, as above described, in making the anterior incision then in dilating and plugging the canal.

8th Question.—What kind of flexions are benefited or cured by the operation?

Answer.—Just such as I have described above.

9th Question.—What is the danger from hemorrhage, and have you frequently encountered it?

Answer.—Sir James Simpson misled me and others in saying the operation was harmless, not attended with hemorrhage or any other danger, and when I began to operate in 1856 and 1857, I took him literally and performed the operation several times in my office (as Sir James often did), allowing my patients to return to their homes afterwards. I came near losing two valuable lives by this method in 1856. One of my patients lived three-quarters of a mile from me, and I got to her just in time to save her life. The other lived in Jersey City, and she had sense enough to send for her family physician, who tamponed the vagina and saved her. These two cases happened within a week of each other and it was a lesson to me never to be forgotten. I can recall but six cases of hemorrhage that have occurred to me after this operation since 1868, and not a single case

since I have adopted the plan of plugging the cervix with a solid substance instead of styptic cotton. Hemorrhage is impossible after the plug is securely fixed in the cervical canal by a firm tampon.

10th Question.—What is the death rate in consequence of the operation?

Answer.—I cannot say, because I do not know how often I have performed the operation. Since 1856 I have operated many hundred times, nearly a thousand, not always for dysmenorrhœa, and I have lost two patients by it. One in 1869, the other in 1873. The first died of general peritonitis, the second of pelvic peritonitis, the consequence of chronic salpingitis. I consider the sponge and laminaria tents more dangerous than this operation, however performed, and by far more dangerous than the operation as I now perform it. Because, with the hard plug in the cervical canal there is no danger whatever of hemorrhage, and less danger of septicism, than when styptic cotton is used, or the sound is passed to keep the cervical canal open.

11th Question.—After twenty years' experience, do you consider the operations of division of the cervix to be entirely justifiable for the relief of obstructive dysmenorrhœa and consequent sterility?

Answer.—Yes.

12th Question.—Do you perform this operation relatively as often now as you did in your earlier practice?

Answer.—Yes.

A long experience enables me now to determine at once what cases require the operation and what may possibly be remedied by other means. I see cases every week where I can with confidence say to the patient: "You can only be cured by operation; submit to this, or do nothing." Since my return home in 1868, I have operated on a great number of such cases that had been for months under the treatment of distinguished gynecologists, who had been using douches and tents, and bougies and glycerine tampons, and nitric acid and iodine, and other useless and inappropriate remedies without the least benefit, when they should (if not at once, certainly in a week or ten days' observation) have seen that everything short of operation was absolutely futile, if not mischievous.

Such treatment, under such circumstances pursued, not only for days and weeks, but for months and years, is mere tampering with disease and unworthy an honorable profession. Let men learn to be honest and do the right thing, or do nothing. The present fashionable persistence in a perturbing but inefficient treatment often results in pelvic cellulitis and other complications that rob the patient of all future hope of relief from the radical and appropriate operation. An illustrative case or two may not be out of place here.

Mrs. —, aged 23, married three years, sterile, exceedingly anxious for offspring, consulted a distinguished gynecologist. He found scanty, irregular, and painful menstruation, the os small, cervix indurated, canal contracted, and uterus retroverted, with cervical catarrh. He bougied the cervix now and then; adjusted a Hodge pessary, or some modification of it; ordered daily douches; used a

sponge-tent occasionally ; applied iodine, nitric acid, and other caustic irritants from time to time, and kept up this sort of irregular, vacillating treatment for eighteen months, without producing the slightest benefit locally or otherwise. Her constitutional symptoms (which I purposely avoid detailing) were not in the least improved.

The case eventually fell into my hands. I found the local condition as above described, and I have not the least doubt that it had remained unchanged during the whole eighteen months of treatment. After careful examination I said to the husband: "You must give up all this piddling treatment. Leave doctors alone; do nothing at all, or submit to an operation." The operation (incision of the cervix), was explained, and in a few days performed. Afterwards a Hodge instrument was fitted. The uterus was kept in its proper position. The secretions were eventually restored to a normal condition. Conception occurred in due time, and a living child was born at full term.

Mrs. ———, aged 30, married nine years, sterile, had pretty much the same condition of the os and cervix as the above, except that there was anteflexion instead of retroversion. She was crazy for offspring. Another distinguished gynæcologist had treated her in the usual routine way off and on for three years.

When I examined the case I could not refrain from saying: "This sort of treatment in a case like yours is all nonsense; stop all treatment, or submit to the only rational method of cure—that of operation." My advice was followed and with the most fortunate result.

I have not time to pursue the subject farther. I will return to it at an early day. I have said more in reply to your questions than I intended, perhaps more than was necessary for your purpose.

Believe me, dear Dr. Pallen, yours truly,

J. MARION SIMS.

Graily Hewitt, the distinguished Professor of Midwifery and Diseases of Women, University College, London, is unqualifiedly in favor of the operation, and follows the method enunciated by Sims in his Classical Notes on Uterine Surgery. He says:

"Having tried the several methods, I prefer the use of the curved scissors and the small knife, believing that the operation is thus more certainly and accurately, and withal, safely performed. Troublesome symptoms rarely follow, but pyæmia or pelvic abscess have occurred occasionally, and the operation is certainly not devoid of all risk. The difficulty in maintaining the aperture is great, and has been mentioned by all who have performed it. After a month or six weeks the wound may become greatly contracted, but the canal does not usually return quite to its former dimensions. . . . I believe that operators do not now incise so deeply as was the case after the first introduction of the operation. My own conviction is, that the objects

of the operation are generally secured, as far as possible, by an incision stopping short of the internal os, and having a pyramidal shape, narrow above, wide below. . . . The cervical canal is thus made sufficiently large to allow the operator to reach the internal os. I agree with Dr. Marion Sims in thus restricting the extent of the incisions practised.

"The operation should be carefully performed, and the patient kept in bed for two or three days afterwards. Hemorrhage can be always controlled by the iron, and by carefully plugging the wound.

"I am far from entertaining a belief that incision of the cervix uteri is all-powerful in the treatment of dysmenorrhœa, but in a certain class of cases it is of great assistance; sometimes by itself, at other times as a basis for further measures.

Prof. T. Gaillard Thomas endorses the operations of division of the cervix uteri so thoroughly and completely, that he explains why they fail, and puts the blame, not on the procedure, but upon the judgment of the operator. He says:

"Should an error be made as to the etiology of the displacement or the recognition of its complications, and this apparently trifling operation be performed during the existence of peri-uterine cellulitis or peritonitis, the gravest results may follow, and the sufferings of the patient be greatly aggravated. Indeed, had all the fatal cases which have occurred in consequence of this operation been published to the profession, as they should have been, the list would, I think, be a startling one. I myself know of five, and have heard rumors of others. It may be asked why this operation upon a part of the uterus which does not ordinarily resent surgical interference should so often be followed by dangerous consequences. My conviction is, that the operation *per se* is not attended by great danger. It is the performance of it when pelvic peritonitis exists in chronic form that has caused it to produce such bad results. Even a minor operation, performed in the face of a condition which should interdict the use of the uterine probe, may set up a train of symptoms which may lead to a fatal issue."

Robert Barnes, of London, is even more decided in his views as to the propriety of the operation. Recognizing the painful procedure, as well as the slow dragging of the dilatation treatment, he concludes by doubting its efficacy, and denies the permanency of result:

"But does the canal remain enlarged? It does not; in a very few days it has contracted to its old diameter, and matters are in *statu quo*. To meet this, the operation has been repeated time after time, either until the patience of the sufferer was exhausted, or until serious accidents arose.

"That the cervix possesses the property of contracting again after simple mechanical stretching is amply proved by its occasional complete return to its previous diameter after parturition, during which a far greater force than that exerted by tents is applied.

"The accidents attending the process are not inconsiderable, and have been too much underrated by those who prefer dilatation by tents to incision, on the mistaken presumption that incision is more dangerous. Numerous cases have occurred of pelvic cellulitis or peritonitis, and some of septicæmic fever after the use of sponge-tents; and similar accidents, although less frequently, have followed the use of laminaria tents. . . . We may then conclude that the use of tents to dilate the cervix uteri is not efficient, and does not possess the advantage of being safer than incision. I entirely agree with Marion Sims that incision properly performed is less dangerous, less painful, and far more effective than any mode of dilatation by plugs or tents; and this is the testimony of patients who have gone through both operations."

After entering his protest against mechanical hysterotomy as performed by Simpson, Greenhalgh, and Aveling, Barnes says:

"I do not condemn these instruments without having tried them. I had used them fairly before the objections expressed were revealed to me."

After describing his method of operating, Barnes further says:

"When the operation has been performed as described and these precautions have been observed, I have never seen any serious symptom arise. Where symptoms of peritonitis have occurred, it has generally been from getting up too soon, from exposure to cold, or undue excitement. The simple passing of the uterine sound for the purpose of diagnosis, has been followed by pelvic cellulitis or peritonitis. It is not, therefore, possible to predict absolutely that in even the most favorable condition such a result may not follow the operation under discussion. But I am warranted by very considerable personal experience, in affirming that with due care, the risk of danger from the operation is infinitely small, and not to be compared with the protracted and repeated suffering and danger attending the obstruction which the operation is designed to remove. . . . I have repeatedly seen women who had passed one, two, or three years of married life without pregnancy, conceive within two or three months after the operation, whilst women who had remained sterile for ten years or more were cured of the dysmenorrhœa only."

The latest authority recognizing the benefits of cervical incisions and divisions for the stenosis of the canal (obstructive dysmenorrhœa proper) is Prof. Carl Schroeder, of Berlin,

Germany, who, notwithstanding the adverse criticisms of many of the American medical reviewers, has written a most excellent work on the diseases of the female sexual organs, particularly with regard to Pathology and Morbid Anatomy. Schroeder says:

"The only rational therapeutical indication is the dilatation of the constricted cervical canal. This dilatation may be accomplished in various ways," etc., etc., and he distinctly avows that, "as a rule, simple dilatation is fully as dangerous as the cutting method, besides being less effective," and that "inflammation of the uterus and cellular tissue does not ensue if the operation has been performed with clean instruments; the hemorrhage, however, may be considerable, and occasionally serious. For this reason, and also to prevent the rapid union of the divided parts, it is advisable to cauterize the raw surface, either by touching it with a pointed actual cautery iron, or by inserting small pledgets of cotton, impregnated with chloride of iron, between the edges. A large tampon should then be placed in the vagina to keep these pledgets in place."

Having previously described the various instruments of Simpson, Greenhalgh, Martin, Matthien, and Coghill, their mechanism and their liability to cut unequally, Schroeder says that:

"The dilatation of the external os is apt to be rather slight with these instruments, and it is generally found necessary, in addition, to incise the cervix with the scissors. . . . Other treatment than absolute rest for a few days is not required. On the following day the tampons should be removed, and precautions taken to prevent reunion, to which the cervix is very much disposed. The external os is best kept open by the finger, which is thrust into it daily, or every other day; the internal os, by the repeated introduction of thick bougies. If the vaginal portion of the cervix is conically elongated and the external os very small, it is advisable to remove a portion of it with the knife and scissors, or, after Spiegelberg's plan, with the galvano-cautery."

On May 16, 1865, Dr. Thos. Addis Emmet read a paper before the New York Obstetrical Society, "On the treatment of dysmenorrhœa and sterility resulting from ante flexion of the uterus." I propose to make several quotations from this, as well as other papers written by Dr. Emmet in later years, as they show conclusively, that although he is less enthusiastic than formerly, and operates less frequently, yet his maturer judgment and riper experience does not lead him to discard the methods

of procedure enunciated in his earlier career as Surgeon-in-Chief to the Woman's Hospital. In 1865 he said:

"Every physician who has turned his attention to uterine disease can recall a variety of cases presenting each phase of progression. A limited number pass the ordeal, and enjoy good health in after-life, but how many fall by the wayside? As a result of my experience, I am positive that it is the most frequent cause known of phthisis in the young, as well as of sterility, a cause of unhappiness to the married female. . . . Occasionally, where the flexure is slight, and confined to the neck, a fortunate pregnancy takes place; but, as a rule, marriage aggravates every symptom, for, in obedience to nature's law, a shattered nervous system is the tribute exacted of every childless female in the marriage state. Fortunately, the progressive stages are gradual, and can be relieved, if attempted before the reparative powers have been destroyed.

"Our attention must be directed to relieving the dysmenorrhœa, and to removing the cause of sterility, for pregnancy will bring about a more radical change in repairing the injury done, than can be accomplished by art. All remedies applicable are but palliatives, and cannot remove a mechanical cause. Dilatation is unphilosophical, and can only succeed when the flexure is so slight that local treatment could relieve the difficulty with less risk. The uterine canal exists in its integrity so far as regards its calibre; the condition may be compared to a lead pipe, forcibly bent on itself, where its diameter is occluded mechanically. An inter-uterine stem is objectionable; he who would introduce a straight instrument into the organ under the circumstance assumes a responsibility, according to my experience, not to be repeated. If the stem to be tolerated is bent to the curve of the organ, the result is negative. Neither is the end to be gained by a gradual change of curve, even if an attack of pelvic cellulitis has not been a result of the undertaking. . . . A large hospital experience led Dr. Sims, some years ago, to abandon all methods as unsafe and negative in result, for the relief of this condition, except the incision of the neck, as proposed by Prof. Simpson. My experience since has fully corroborated his teaching; we agree perfectly in principle, and only differ in the method by which it should be done."

After describing his operation, Dr. Emmet says:

"It must be done boldly, with the view of opening the canal perfectly; but at the same time it should be borne in mind that, without a due realization of the danger, with the parts in a state of fatty degeneration and the uterine walls so thin at this point, a perforation is possible. The danger, as in any other operation, however simple, has only to be appreciated by the careful operator for its occurrence to be avoided.

"I can fully corroborate Dr. Sims's testimony as to the degree of risk in a simple division of the cervix. During the past six or seven years, we have performed the operation several hundred times for various purposes, in hospital and private practice. As a result of this experience, it may be stated that, wherever there has been no previous pelvic cellulitis, and the after-treatment is conducted with the necessary care, no minor operation of surgery is attended with less pain or risk to the patient."

In a paper on "Surgery of the Cervix, etc.," read by Dr. Emmet before the Medical Society of the County of New York, February 8, 1869, he says :

"As it is the wish of others that I should place on record my views resulting from personal observation on these points, I state the fact, that the plea may shield me from the charge of egotism. Division of the cervix, for the relief of dysmenorrhœa and sterility, has been a favorite practice for years past with many of the profession. Scarcely any operation in surgery, however, has been proposed where so little judgment, as a rule, has been exercised, and where so frequently its indiscriminate performance has even amounted to malpractice. A reaction has slowly taken place in the views of the profession regarding this operation, but from one extreme we may fall into the opposite error, as we have certain conditions of the uterus which cannot be relieved otherwise than by a division of the cervix. . . . A division of the cervix should not be attempted in any case when the existence of perimetritis is suspected. If this rule be observed, and the patient with antelexion has been properly prepared for the operation which I shall describe, it is attended with as little risk of life or bad consequences as any in minor surgery, while we are all probably familiar with instances to the contrary where this rule has not been observed."

In a paper entitled "The Philosophy of Uterine Disease," read before the Medical Library and Journal Association, June 5, 1874, Dr. Emmet reiterates his views in the article just quoted, and further states, "this operation" (relief of flexure by posterior section) "is attended with but little risk, if the case is properly cared for, from the fact that the organ is otherwise in a comparatively healthy condition; unless the history of the case points to the existence of a previous attack of cellulitis, resulting from accidental cause," there will be but little danger of this complication from the operation. It will now be seen that from the evidence presented by quotations from Simpson, Graily Hewitt, T. Gaillard Thomas, Barnes, Schroeder, Emmet,

and the personal communication of Sims, that the various operations for the relief of dysmenorrhœa have been strenuously advocated, and practised with marked success.

Per contra, three very distinguished gynecologists, Dr. Tilt of London, Prof. Peaslee of New York, and Prof. Wm. Goodell of Philadelphia, have arrayed themselves against the procedures usually practised. With regard to Tilt, his opposition can hardly be considered just, as his objections were conceived long before the profession could judge of the merits of the case, and having entered his judgment before the evidence was taken, I cannot attempt to argue against *a priori* reasoning upon a subject entirely analytical. Not so, however, with Prof. Peaslee. His paper is the last one on the subject, and is the result of his usual calm deliberation and mature experience. His statements are the result of careful consideration, fully meriting the attention of the entire profession. He says that both Simpson's and Sims's methods are hazardous, more particularly the latter's, in consequence of the change in the shape, size, and relations of the whole uterine cavity by the deep incisions, profuse, and sometimes fatal hemorrhage, pelvic cellulitis, and septic peritonitis; that if the patient recover without any of these difficulties, should conception ensue, both he and Chrobak have recognized "the decided tendency to abortion." To use his own words, "there cannot, I think, be a reasonable doubt that Simpson's operation, performed on a woman in perfect health, would almost certainly render her sterile, unless the incision closed up."

Prof. Peaslee stands almost alone in these extreme views, and his experience is quite different from any of the before-mentioned gynecologists.

Prof. Goodell within the past year or two has been substituting forcible and rapid divulsion for incisions of the cervix. His statistics and data have not yet been published. I addressed him a note requesting his views on the subject and the results obtained. The subjoined reply is all that can at present be given, although it would seem that the amount of force used would beget submucous and interstitial ecchymoses, traumatic and septic lymphangitis and phlebitis, much oftener than simple incision, if the uterus were as prone to these conditions as has been urged by the opponents of the cutting operation. It will

be seen, however, from Prof. Goodell's letter that he had to resort to incision when his dilators failed him.

PHILADELPHIA, April 9, 1877.

DEAR DR. PALLEN—I am not prepared at present to give you any statistics, because I have not the time to collect my data.

I use two dilators—one, a delicate one to tunnel the way for a second very powerful one that does not feather, and works with a screw. Now, when I perform this operation *under ether*, and *rapidly*, I expect permanent relief. Only twice, out of a large number of cases, have I been obliged to repeat the operation. In one of these I had finally to resort to incision, and it remains yet to be seen, whether that will do any good. Both of these cases were much benefited by the first dilatation; but while the relief was not permanent, their sufferings were by no means so bad as before the operation. It was now the flexion, not the stenosis *per se*, that caused a return of the dysmenorrhœa.

I gave the substance of your letter from memory to a lady this morning, whose womb I dilated last September. She told me to say to you that she never could be sufficiently thankful to me for that operation. For while she is not now entirely free from pain at her periods, yet she is not confined to her bed, as she used to be, and can attend to all her household duties. She also reminded me that she had sent two of her friends to me to be relieved of their sufferings by the same operation.

I have tried this operation without ether, but it is too painful to permit the widest divergence of the blades, and it is, therefore, under such circumstances, unsatisfactory.

Yours, in haste,

WM. GOODELL.

Thus far I have presented the testimony of those best entitled to pronounce upon the necessity for, and practicability of, incisions of the cervix for the relief of dysmenorrhœa and sterility dependent upon stenosis of the cervical canal. The preponderance of evidence is in favor of the operation, and a somewhat extensive experience leads me to maintain similar views. More than ten years ago I wrote a paper,¹ in which I enunciated two propositions:

1. Menstruation irregular in its character is always coincident with uterine disease.

2. All uterine abnormalities tend to a deformity of the organ, either in its neck, or in its body, or both.

These propositions are correct in the main, without being

¹ *On the treatment of certain uterine abnormalities.* Prize essay, American Medical Association, 1867.

absolutely and invariably true, particularly with regard to the first, as irregular menstruation may depend upon systemic causes, wherein the uterine disease is but functional and symptomatic. However, so correct is the principle that we may accept it without cavil, when we remember that the healthy functioning of any organism necessitates a healthy condition for its performances. No unhealthy cause can produce natural effects; therefore, from a uterus at all abnormal can no healthy menstrual flux proceed.

All uterine diseases are abnormalities which vary, more or less, the shape and size of the organ, and consequently are displacements in a greater or less degree, or they tend to displacement. This proposition may appear somewhat vague, but dysmenorrhœa and menorrhagia are purely symptomatic of a local lesion, in a vast majority of cases remedied by local treatment, and they result from the deposit of some neoplasm foreign to the normal tissue of the uterus.

Whenever we have dysmenorrhœa proper, as distinguished from *menorrhagia*, it invariably depends upon some obstruction to the exit of the blood, and may be produced by stenosis of the cervical canal in consequence of induration and atrophy of the cervical structure, or in consequence of thickening and hypertrophy of that tissue or the mucous membrane lining it. It may also depend upon a flexion at or below the internal os, or it may be produced by the presence of a foreign growth within, on, or outside of the uterus. Dysmenorrhœa may likewise be produced by the retention of the blood and detritus of menstruation, in consequence of versions, whereby the body of the uterus is displaced and lies lower in the pelvic excavation than does the cervix, and the flow is prevented, and the fluid retained, by gravitation. Up to a certain period of the progress of the lesion, in the great majority of cases of obstructive dysmenorrhœa from whatever cause, there is an enlargement of the body of the uterus, together with an inflammation of its lining membrane. This hypertrophic condition is the result of menstrual subinvolution, as well as overwork every month to expel the fluids of menstruation, and is the analogue of ventricular increase in aortic obstruction or vesical thickening from the stricture of the urethra. The treatment then is evidently unphilosophical, if directed to the removal of the hypertrophy before

getting rid of the obstruction, which is a neoplastic deposit at or below the internal os. The uterus undergoes involution every month during menstrual life, and if this process be retarded in consequence of congenital defect of development, or from pathological accident, the woman's condition is in no wise ameliorated, unless pregnancy should supervene, or art interfere. After a longer or shorter period of monthly agonies, the tissue of the cervix becomes indurated, frequently atrophied, the recently formed connective tissue becomes cicatricially retracted, "the vessels become imperforate, and the young mucoid connective tissue becomes firm and fibrillated. The uterus then again diminishes in size, and on section exhibits an exceedingly firm, almost cartilaginous tissue, which creaks under the knife, and has an anæmic, cicatricial appearance." This description from Schroeder is the microscopical anatomy of what I called ten years since, from macroscopical observation, the *symmetrically interstitial fibroid*. Whenever this condition exists, either in the infra-vaginal cervix, or at the internal os, we are sure to find stenosis of the canal with very small os externum. Should a sponge or laminaria tent be used for the purposes of dilatation, it will be found when removed to be irregularly expanded, with a ring of constriction upon it somewhere, clearly indicative of local non-expansion—I refer to cases where no flexion exists, and should such be the case, the tent can rarely be passed beyond it into the cavity of the body, unless it be bent to correspond with the axis of the canal. Experience has taught me that in such cases no amount of dilatation will suffice, and unless the stricture is divided by some cutting instrument we lose time, inflict pain, and imperil our patient's uterine integrity, if not her life.

Since November, 1865, I have operated for stenosis of the cervical canal producing obstructive dysmenorrhœa three hundred and thirty-seven times. These incisions have been made by the *lithotome caché* of Frère Côme, the metrotomes of Simpson, White, and Matthien, the scissors and scimiter-shaped knife as advised by Sims in his "Uterine Surgery," and by a simple narrow-bladed bistoury with a long handle. The sections have been bilateral for straight canal with stenosis, posterior for anteflexure of the neck at or below the internal os, anterior for retroflexion of the neck, and antero-posterior

for ante flexion of the body with retro flexion of the neck, the sigmoid-shaped uterus.

Possibly I would not now operate upon some of these cases, as more than ten years of experience would enable me to properly select; but, in the earlier periods of my gynæcological efforts, I had no guide to direct save Simpson's writings and Sims's "Clinical Notes on Uterine Surgery." I was enthused with this earnest original work, and enchanted by its recitals of success, and therefore emboldened to do much which I would have hesitated to attempt save for its publication—it gave me courage to obtain experience. Prof. T. Gaillard Thomas seems likewise to have been fascinated by it, as he says of it, in his "Report on Obstetrics and Gynæcology," July, 1876, one of the series published in the American Journal of Medical Sciences, on "A Century of American Medicine," that "ten years have elapsed since its publication, and yet it may safely be stated that no work now extant constitutes a more perfect guide to the gynæcological surgeon." After a careful estimate of all these years of experience, I am constrained to say that, in properly selected cases, where no perimetritis or pelvic cellulitis exists, no procedure offers more certainty of success, more freedom from danger, than does cervical division for obstructive dysmenorrhœa. This is very generally believed, and such gynæcologists as have been quoted in this article bear testimony thereto. Of the 337 cases upon which I have operated, more than fifty per cent. have been relieved of their dysmenorrhœa, some thirteen or fourteen have conceived and borne children; about one-fourth of the number were not benefited, from inability to keep open the canal and from other causes unrecognized at the time of the operation. Of pelvic cellulitis and perimetritis, I have encountered three cases; of eversion of the lips (ectropion of the os), only one case; of serious hemorrhage, either primary or secondary, not one. I have had two deaths to follow the operation—I say, "follow the operation," because I am firmly convinced that under other conditions than those which surrounded them, these patients would not have died. In the first case, that of a healthy young married German woman, who had ante flexion of the neck produced by a small fibroid in the posterior lip, and who suffered from dysmenorrhœa and sterility, I enucleated the tumor (about the size of a

small hickory-nut) and divided the internal os bilaterally with a scimiter-shaped knife. There was no hemorrhage, no subsequent chill or fever, and on the thirteenth day after the operation she got out of bed, on the fifteenth day she scrubbed her kitchen and bed-room floors, and on the next day was seized with rigors, fever, intense hypogastric pain, and four days afterwards died of diffuse general peritonitis. The second case wherein death supervened was that of a lady of thirty-four, who was hysterical, hyperæsthetic, and fragile. I operated upon her at the solicitation of her attending physician, who believed, as I did most thoroughly, that her dysmenorrhœa might be cured by an operation for ante flexion of the neck just below the internal os. The divisions of the posterior lip of the cervix, together with the knuckling at the site of the flexure, were made according to Emmet's method. Everything proceeded excellently well until the fourth day, when the dwelling adjoining her residence caught fire, which greatly alarmed her, and as the room began to fill with smoke, her excitement grew apace, and her fears were so wrought upon that she could not be prevailed upon to remain in bed; she jumped up and ran down-stairs, awaiting the result of the fire for more than an hour, and when she was finally persuaded to again retire to her bed she was exhausted from fright and fatigue. In less than twelve hours metro-peritonitis was developed, from which she succumbed on the third day following.

In comparing the results of these cases of dilatation by cutting with dilatation by tents, the deductions are very unfavorable to tenting. In the same period of time (twelve years) that these three hundred and thirty-seven incision operations were made, some hundred and fifty patients have been subjected to treatment by tents (of sponge or laminaria) for various conditions, of which two succumbed rapidly from metro-peritonitis, fourteen had pelvic cellulitis, and one had metritis followed by abscess of the posterior wall, which discharged through the rectum. Nine of these cases were in the better classes of society, living in their own houses, and the two patients who died were young, and came from the country for treatment for obstructive dysmenorrhœa and sterility. These unfortunate results made me chary of tents, and during the last five years, except for purposes of intrauterine exploration, I have rarely

used them. If the choice is presented, all conditions being equal, there is no hesitancy between incision and dilatation; the question of pain is in favor of the cutting, and my individual experience inclines me to believe that there is less danger, very much less danger than from sponge or laminaria tents. Years ago I urged that no cutting should ever be attempted, if there were any traces of cellulitis, and still adhering to this most important rule and guide, I would be equally impressed against tenting or dilatation by bougies. In cases of this nature there is very little prospect of speedy benefit until the perimetric troubles are removed, wherefore tenting or the use of bougies must be severely enjoined lest the smouldering embers of metro-peritoneal or cellular inflammation be once more rekindled and a pelvic conflagration be established difficult to subdue, often dangerous, and sometimes fatal.

My deductions with regard to incisions and divisions of the cervix uteri for obstructive dysmenorrhœa and sterility dependent thereon are favorable, and I here repeat what I said in 1867 (Prize Essay, American Medical Association): "To say that these operations are always successful is simply preposterous; but that they offer a readier, quicker, and more certain beneficial result than any other heretofore devised plan, is unquestionably true as far my experience goes. In some instances success is not obtained, yet the failures are relatively much less frequent than by sponge tents; and as for pain, the comparison is not to be entertained for a single instant." Ten additional years of experience have strengthened these views, and a proper elimination of cases would produce even better results, particularly with the improvements we possess in combating septic inflammations. The operation is to be performed upon no case where any cellulitis exists, nor upon cervixes of women laboring under incurable affections of heart, lungs, liver, or kidneys, nor in surgical wards of large hospitals, nor by a surgeon who has been in attendance upon erysipelatous, diphtheritic, scarlatinous or puerperal diseases. With precautions against sepsis from within or contagion from without, with all of the instruments well cleansed, and with such conditions as are below mentioned, I regard incisions of the cervix as not only justifiable, but as the proper and necessary mode of treatment.

a.—In congenital stenosis of the cervical canal in consequence

of defective development, or from faulty implantation of the vagina, the small conical neck with pin-hole os. Bilateral operation.

b.—In acquired stenosis of the cervical canal, the result of pathological change of cervical tissue-substance where the structure is hard in consequence of atrophy and induration of the connective tissue, with a diminution in size of the blood-vessels and a permanent ischœmia—the elongated conical neck with variable os, but usually small. This condition is most usually attended by enlarged body and catarrhal inflammation of the endometrium. Bilateral operation.

c.—In congenital ante flexion of the neck, usually mushroom-shaped, small, indurated and pale, with variable-sized os, connected with catarrhal endometritis; and, if of long duration, fatty degeneration of at the site of flexion. Emmet's posterior section of the neck with division of the knuckle at flexure.

d.—In acquired ante flexion of the neck from hypertrophic inflammation of the anterior wall of the body, or from sub-involution of the entire organ, or from posterior cervical hyperplasia. Posterior section of the neck simply, occasionally an additional bilateral division at the internal os.

e.—In the various forms of congenital or acquired partial atresia of the cervical canal.

f.—In retro flexion of the neck, usually acquired. The operation is the converse of ante flexion above described, but having seen but two cases, I cannot formulate any rule.

RETENTION OF THE PLACENTA IN LABOR AT TERM—REPORT OF A CASE WITH CRITICAL REMARKS.

BY
J. TRUSH, M.D.¹
Cincinnati, Ohio.

RETENTION of the placenta is at all times regarded as a grave complication of the parturient act, but is known to be especially dangerous after labor near or at term—frightful hem-

¹ Read before the Cincinnati Obst. Society.

orrhage, putrefaction of the imprisoned placenta, and septic infection being almost certain to supervene, while after an abortion, these eventualities, if they occur at all, are far more benign in their character, but not so rarely they do never manifest themselves, the placenta remaining innocuous and undergoing absorption without decomposition. That a mode of termination similar to this, although exceedingly rare, may also take place, under certain circumstances, with retained placenta *in labor at term*, the writer begs leave to submit, in proof, the following case and reflections:

On the 25th of November, 1875, about seven o'clock p.m., I was called to Mrs. R., reported to be in labor with her first child. Upon arrival at the bedside of the patient I learned that "the waters had broke" some four hours previous to my coming, and that a large quantity of liquid had escaped; further, that for several days past she had experienced more or less pain in the small of the back and lower part of the abdomen, and besides this had been greatly annoyed by a constant uneasiness, amounting often to positive pain, referable to the upper and right side of her abdomen, where there was a large projecting tumor; the date of origin of this pain patient could not give, but had noticed it for many weeks. Patient also stated that she believed her labor to be "overdue," she having menstruated for the last time during the first week of January preceding, being consequently in the forty-sixth week of her pregnancy. She had noticed traces of a bloody discharge at the beginning of February, but this had been so unlike her usual periodical flow, that she felt confident it could not have been a return of her monthly sickness. Age of patient, 33 years.

A digital exploration found the cervix uteri entirely obliterated and the os dilated for passage of two fingers; no presenting part of the foetus could be felt immediately over the uterine orifice; higher up foetal parts were barely reached, but could not be distinguished. Suspecting a transverse presentation, a careful external exploration was instituted, with the result of detecting very distinctly an oblique situation of the child, one extremity of the foetus—probably the cephalic—being high up in the right side and constituting the painful tumor mentioned by the patient, the other—pelvic extremity—

resting well out upon the left iliac fossa. These impressions were fully confirmed by the subsequent bimanual manipulations resorted to for the purpose of correcting the anomalous presentation—vigorous pressure from without, brought to bear upon the supposed breech, having speedily brought a foot within reach of the internal hand. This foot was secured, brought through the os, and thus the abnormal presentation of the child corrected. A strong tendency to renewal of the displacement, however, became manifest with any change of the patient from her left side decubitus, in which posture the version had been effected; she was therefore directed to remain in this position until I should see her again. Some three hours later, 11 o'clock P.M., called again; patient had had a few slight pains in the meantime; foot was well down in vagina; leg through the os up to the knee; no further tendency to displacement of breech. I now recognized the foot in the vagina as the right, the toes directed forward, abdomen of child consequently also anterior. Remained at patient's house during the night, expecting that my services would be required before morning; the pains remained, however, feeble and irregular, and beyond extrusion of the knee, no advance had been made by the following morning, nor was any material progress made during the day of the 26th. By 11 o'clock P.M. of this day about two-thirds of the thigh only had passed the os uteri, which so firmly embraced the foetal extremity as to cause considerable tumefaction of the expelled portion thereof. The patient, as well as her friends, were now becoming exceedingly clamorous, demanding a termination of the labor. Inasmuch as indications for interference, aside from protracted duration, really existed, such as slight feverishness of the patient and a somewhat offensive smell of the vaginal secretion, I decided to deliver by artificial force. Traction was consequently made upon the protruding foetal extremity, which, proving ineffectual, soon led to the discovery that the left hip of the child was lodged upon the left horizontal ramus of the maternal pelvis; pressure from without upon the lodged hip, conjoined with traction, were equally ineffective, and it presently became sufficiently evident that, unless the left leg was also brought down, no progress in the labor would, or could be made. After considerable exertion this object was accomplished. Once both extremities of

the foetus down in the vagina, the hips and inferior part of the body were expelled without assistance—the child's abdomen remaining anterior, as it had been at the commencement of the labor. The cord being now accessible, I ascertained that the foetal pulse was rather feeble and somewhat irregular; evidently no time was to be lost in extricating the child from its perilous situation. Unfortunately the arms were not in their normal attitude, but were found partly extended along the sides of the head; this, together with the unfavorable position of the body of the child, rendered the delivery of the arms difficult and correspondingly tardy; still greater difficulties were encountered in the extraction of the head, which was yet high up in the pelvis, the chin to the right anterior. To bring the chin down upon the sternum was comparatively easy, but to drag the head through the os uteri and through the remainder of the parturient canal, required all the force I could bring to bear, and occupied so many precious minutes, that the child died under the operation, and a lifeless body was finally extracted. Some attempts at resuscitation were made, but without avail. The child, a girl, was very large, weighing, according to the statement of the father, who did the weighing, $12\frac{1}{2}$ pounds. Before turning my attention to the child, I hurriedly ascertained the state of the uterus; it was rather large, but moderately firm; there was no hemorrhage. The resuscitation manipulations, now instituted, occupied probably half an hour. After satisfying myself that all efforts in this direction were useless, I proceeded to look after the placenta, expecting to find it, if not already expelled, at least detached and in condition to be easily removed. In these expectations I was doomed to disappointment, for not only was the placenta not expelled, or in condition to be readily extracted, but—taking the cord as a guide—was found high up in the right side of the uterine cavity, immovably fixed and obviously not detached in any part of its extent, as evidenced, further, by the entire absence of hemorrhage. The patient had experienced no pain since removal of the child, and, judging by the previous behavior of the uterus, no energetic spontaneous contractions were to be anticipated.

Deeming further delay of active interference, under the circumstances, injudicious, I at once brought into requisition the

usual agencies for artificial removal of the placenta—employing first friction over the fundus, and, perceiving a slight hardening of the uterine tumor, next resorted to external compression after the method of Credé. All to no purpose; the placenta remained as it had been, securely attached. After a little rest the same manœuvres were repeated, and with a like unsuccessful result. External compression and traction upon the cord conjointly were then tried, with no better success, and a repetition of these manipulations led to rupture of the cord—this structure giving way, as subsequently ascertained, at the point of insertion in the placenta—without in the least changing the condition of the afterbirth. It was quite obvious now, that nothing short of introduction of the hand into the uterine cavity would prove effective in terminating the third stage of this tedious labor. Before entering upon this operation, however, I administered to the patient a teaspoonful of the fluid extract of ergot and then proceeded to pass the hand—the right—into the uterus; in its passage a moderate degree of resistance was encountered at the os internum; no difficulty was experienced in reaching and recognizing the placenta, making out its precise location, as well as the character of its surface, nor in determining the fact that the entire structure was still firmly adherent. The placenta, apparently of average size, was found located in the immediate vicinity of the right Fallopian tube opening, extending in a vertical direction from the fundus to within about two inches of the supposed os internum—the point of slight resistance encountered in passage of the hand—and horizontally involving the adjacent parts of both anterior and posterior walls to about equal extent; its surface presented numerous inequalities in the shape of nodular projections and conveyed the impression of harshness—a kind of leathery feel—in marked contrast with the smooth and soft texture of the remainder of the uterine cavity. Near the centre of the placenta a small depression with sharp borders was discovered and at once recognized as the site of insertion of the torn-out cord; the periphery throughout was firm and resisting, so much so that the several attempts made to insert the fingers between the placenta and the uterine wall proved futile; the hand consequently had to be withdrawn without having accomplished the desired object. Two more teaspoonfuls of fluid extract of ergot were now administered,

and after the lapse of about an hour, no detachment of the placenta having taken place in the meantime, the hand was reintroduced into the uterine cavity. This time a well-pronounced resistance was met with at the os internum; in other respects the passage of the hand was as easy as the first time. Again the placenta—especially its borders—was carefully explored: not a single vulnerable point could be detected, and all efforts to detach some part of its periphery were as unsuccessful as on the previous occasion. When about to withdraw the hand again, the fingers accidentally fell into the little cavity occasioned by laceration of the cord; thinking that this might possibly serve as a starting-point for detachment, I pressed middle and index fingers firmly into the placental tissue, and thus secured a hold upon a small fragment thereof. As this was being brought away a distinct tearing sensation was perceived by the retreating hand. The removed fragment was of an elongated shape, having attached to one of its extremities a shred of membrane some three inches in length; the only other peculiarities noticed were its pale color and the exceeding toughness. The entire mass could not have weighed more than about an ounce. After this second attempt the patient was permitted to rest for probably fully an hour and a half; in the meantime she took three more drachm doses of the fluid extract of ergot. An external examination of the uterine tumor now made disclosed the fact that it was decidedly firmer and had changed in shape, instead of being uniformly globular; it now presented an irregular outline, conveying the impression of a double tumor, a secondary rounded projection arising apparently from the right side of the central body; evidently some sort of irregular contraction had taken place in the uterus during this interval of rest. There was still no hemorrhage, no indications of any kind that the placenta was being separated. What could or should I do under the circumstances? Remembering how grave were the consequences of retained placenta, I felt constrained to make at least one more determined effort at forcible detachment and removal of the retained afterbirth. This time the introduction of the hand was not quite so easy as it had been heretofore. The constriction at the site of the os internum, already noticed, had now encroached upon the calibre of the passage to such a degree that the opening left

barely admitted the tip of the index-finger. A few moments of steady pressure, however, was adequate to dilate this stricture, and the hand passed on, but, after entering the uterine cavity, to my surprise, no placenta could be felt, and it was only after careful palpation in the known locality of its attachment that in its stead the existence of a small orifice, less even in diameter than the one encountered at the os internum, was detected; this orifice obviously led to another compartment, the one holding the placenta and forming the secondary globular projection. This constriction also was dilated with comparative ease, and the placenta was once more under the hand. Not the least evidence of detachment could be detected anywhere, nor did a very considerable degree of force enable me to penetrate between the placenta and the wall of the uterus, either at the periphery or at the point of my former attack near the centre; another small piece only of placental tissue was the sole fruit of this third intrauterine effort at detachment of the adherent placenta. The fragment brought away this time was smaller even than the first, altogether, exclusive of the cord, certainly weighing not more than two ounces. No part of the membranes, except the small shred above mentioned, had so far been either extracted or expelled, nor were there any loose membranous structures—folds, shreds, etc.,—to be discovered in the uterine cavity.

The patient being now very much exhausted and greatly in need of rest, it was thought best—there being still no hemorrhage—to abstain for the present from all further operative interference; accordingly she was made comfortable and permitted to rest. The fluid extract of ergot was ordered to be continued, but only in half-drachm doses and at intervals of one hour. After assuring myself once more that no hemorrhage existed, and giving certain necessary instructions in regard to care of the patient, etc., I took my leave, it being now nearly 5 o'clock in the morning, just about forty hours after rupture of membranes.

Fully comprehending the dangerous situation of my patient, the case very naturally caused me considerable anxiety; at almost any moment a profuse, even fatal hemorrhage might spring up; later, decomposition and septic infection was almost certain to follow; in either event the prospects were anything

but encouraging. Nevertheless, I failed to perceive how else I could better subserve the interests of my patient than by pursuing henceforth an expectant course, exercise the utmost vigilance, obviate as far as possible dangerous events, and meet therapeutic indications as they presented themselves.

At 9 o'clock A.M., Nov. 27th, saw patient again; found her resting comfortably; some feverishness present; pulse between 96 and 100 beats per minute; temperature not taken. Nurse, a sister of the patient, made report of the existence of a reddish watery discharge, issuing in moderate quantity from the genital passage of patient; no hemorrhage. On inspection of soiled napkins could just perceive the reddish tint of the substance with which they were soiled. Patient henceforth, until further orders, to have half-drachm doses of fluid extract of ergot only every three hours, and to be placed upon a non-stimulating liquid diet.

9 o'clock P.M.—Patient had passed her urine; otherwise no change. Ergot to be continued during the night.

Nov. 28th, 8 A.M. and 8 P.M.—Patient still quite comfortable; complains, however, of some soreness in lower part of abdomen; no pain occasioned by moderate pressure; vaginal discharge same in appearance, but begins to emit a disagreeable odor. Prescribed a disinfectant wash composed of chamomile tea and one per cent. of carbolic acid; a quart to be injected, warm, into vagina and uterus three times in 24 hours. Ergot continued.

Nov. 29th.—Patient complains of headache, dizziness, and a sense of fulness of the head; feels generally very sore and tired; vaginal discharge same, perhaps a little more offensive. Ergot to be discontinued; ordered, instead, a resinous cathartic.

Nov. 30th.—Patient feels better than yesterday; cathartic medicine has operated; two small clots of blood passed from vagina during previous night; vaginal discharge a little darker, still more offensive, but watery as before. Local treatment continued.

11 o'clock P.M., same day.—Hurriedly sent for, patient being worse. Learned on arrival that she had had a violent chill, had vomited, and was then suffering severe pain in region of stomach, paroxysmal in character; found abdomen a little tympanitic, but not sensitive to pressure at any part of its ex-

tent; pulse ranged between 116 and 120 per minute; temperature, 101° F. Ordered morphine and chloroform internally, and turpentine stupes to abdomen.

Dec. 1st.—Patient feels better than last night, has rested well since 2 o'clock, pain having disappeared about that hour; pulse, 108; temperature, 100° F.; lochial discharge still watery, but decidedly offensive now. Patient takes her liquid nourishment, but does not relish it. To have fifteen grains of quinine, divided into three doses; to take a dose every hour. Local treatment continued.

Same day P.M.—No material change since morning; patient complains only of ringing in the ears. Was shown a small clot which had come away during the operation of syringing; found it to be a piece of decomposing placenta about the size of a hickory nut. Patient being restless, ordered a dose of morphine.

Dec. 2d.—Patient had rested fairly last night, but had perspired very profusely; lochial discharge same in character, diminished, however, in quantity. Another little fragment of decomposing placental structure, about the size of a hazel-nut, was exhibited by nurse; this also had come away while using the vaginal injection. Patient to have tonic doses of quinine with aromatic sulphuric acid; no change in local treatment.

Same day P.M.—On attempting to administer the usual disinfectant wash, the discovery was made that the vagina was partially occluded by the presence in its upper portion of some foreign substance; this, after removal, proved to be still another fragment of placental tissue in a state of decomposition, very irregular in shape when spread out; in size, when rolled together, about equal to a hulled walnut.

Dec. 3d.—Patient manifestly better; has some little appetite; lochial discharge has almost disappeared, is also less offensive; in other respects unchanged. Pulse 96; temp. 99°. Bowels have moved spontaneously; uterus can be distinctly felt over symphysis pubes. Tonic medicine and vaginal injections to be continued.

Without entering into further details respecting the subsequent progress of this case, suffice it to state that, from this day onward, the patient steadily improved. Under the use of the simple tonic above mentioned, her appetite was soon fairly re-

stored, and, with good food and reasonably good digestion, her strength perceptibly increased day by day. Pulse and temperature remained slightly above the normal standard for nearly two weeks longer. After the 4th or 5th of December the lochial discharge disappeared entirely, so did also the last trace of an offensive smell, and the vaginal injections, which were kept up for some days longer, came away without any perceptible contamination. And, beyond a little mucus, no discharge whatsoever took place from the genital passage of the patient during the entire period of my subsequent attendance.

Towards the close of the third week after confinement I ventured to make a bimanual exploration of the uterus; the organ had undergone a very fair degree of involution, it being entirely within the true pelvis, and much reduced in size.

Three weeks later the bimanual exploration was repeated. The uterus was found to be still larger than the normal organ at this period after the labor ought to be; had, however, certainly undergone a very decided reduction in size since the previous examination; so much so that I deemed it entirely safe to grant the patient the privilege to be up and walk about her rooms whenever she felt disposed to do so, but not to resume work, as also desired, until I should have examined her again.

At the expiration of another three weeks a third bimanual exploration of the uterus was made, and, it should be stated, under conditions highly favorable to a satisfactory examination. The patient's abdominal walls being thin and relaxed, and the parts devoid of all abnormal sensitiveness to touch. The uterus, distinctly felt and carefully palpated, was now, to the best of my judgment, no larger than the average normal uterus of the primiparous, or multiparous female during non-pregnant periods. The patient had almost entirely recuperated her strength, her appetite was good, she felt well and insisted on doing her own work. Permission was given and the patient discharged.

During these nine weeks I had seen this patient almost daily; daily for the first six weeks, and at least every other day during the remainder of my attendance. After this period I still called occasionally, for the purpose of learning if anything unusual had transpired. Nothing occurred until the following

month of June. At this time, after having for some days suffered from headache, the lady noticed a very pale and scanty sanguineous discharge from her genitals; a similar flow made its appearance in July, again in August, September, October, and November. The July menstruation was still very scanty; that of August, on the other hand, unusually profuse, as well as protracted, lasting some four days, and consisting largely of clotted blood; the three subsequent returns of the menses approached more nearly the, with her, normal type. From November to this date of writing—March 7th, 1877—no regular menstruation has been observed; twice, however, during the time, a slight reddish discharge had manifested itself, being each time of brief duration, and occurring at irregular intervals—viz., six and three weeks. This apparent suppression of the menses, taken in connection with certain other symptoms, would seem to justify the belief, which the lady indulges, viz., that pregnancy has again taken place.

Fifteen months have now passed since the occurrence of the labor herein described, and, as will have been perceived, the entire account fails to show how the afterbirth in this case was disposed of; hence the rather interesting query: "What became of the retained placenta and membranes?"

Before an intelligent answer can be given to this question we must endeavor to ascertain "what was the cause or causes of the retention."

If authorities are consulted upon this subject, it will be found that four principal conditions, or agencies, are held responsible for the occurrence of morbid retention of the placenta in labor at term; these are:

1. Excessive volume of the placenta.
2. Atony of the uterus, general or local.
3. Irregular contractions of the uterus.
4. Morbid adhesions of the placenta.

Obviously the first of the anomalies here enumerated need not be taken into consideration as a complicating factor in the present instance. In regard to the second of the causes named, "Atony of the Uterus," it will be seen by reference to the history, that the uterus, though at no time in a state of absolute relaxation, on the contrary, always manifesting a fair degree of tonicity—contracted so feebly that, for thirty hours or more, scarcely

any progress was made in the labor. After the removal of the child, and after the administration of about half an ounce of the fluid extract of ergot, the organ contracted at all points but the placental region, this still remaining in the previous semi-atonie condition. It may therefore be justly claimed that *atony* of the uterus, first general and subsequently partial, constituted one, at least, of the morbid elements in the case, but, in view of the fact that it was found impossible to effect detachment of the placenta by manual force, cannot be held solely accountable for the retention. Neither will the facts set forth warrant the assumption that "irregular"—hour-glass—contractions were the chief or essential cause of the non-delivery of the secundines, because, in the first place, the hour-glass contraction—double hour-glass—was not present at first and second introduction of the hand into the uterine cavity; and secondly, when it did exist and was encountered, on third insertion of the hand, these strictures in the parturient canal did not offer any serious obstacle, and still the removal of the placenta was as far from being an accomplished fact as ever. We must consequently look to the fourth of the conditions cited—morbid adhesions—as the cause, *per se*, of the retention of the placenta and membranes in the case under consideration.

It will not be deemed an act of supererogation, it is hoped, to define, what, in the opinion of the writer, constitutes "morbid adhesion" of the placenta. Briefly, then: if in any case the uterus contracts with average vigor, and yet fails to detach the placenta, wholly or in part, such case should be regarded as an instance of morbidly adherent placenta. The adhesions, though of sufficient firmness to resist the contractions of the uterus, may yet constitute but an insignificant obstacle to the hand of the accoucheur, or the obstacle may be so considerable, the adhesions so firm, that detachment either cannot be effected at all, or only at the most imminent risk of laceration of the uterine wall; in extent, the adhesions may be limited to a narrowly circumscribed area, one or two cotyledons merely being affected, or they may involve the entire placenta; the former, partial variety, being, for obvious reasons, much more common than the latter, diffuse form.

These statements being in consonance with established facts, we are naturally led to inquire in what respects adherent pla-

centæ differ from the normal, non-adherent organ; whether the adhesions are due to the presence of abnormal tissues, and, if yes, what are the characteristics of such tissues? If it shall be found that anomalous tissues must be held responsible for the morbid adhesions, we are at once confronted by still another question, one, the practical bearings of which cannot well be over-estimated, viz.: What is the cause of all this—why this perverted development?

Before attempting to answer these questions, let us call to mind the normal structure of the placenta: A compound organ, made up of tissues derived from two organisms, the maternal and the foetal; the former furnishing the decidua serotina; the latter, the chorionic villi. In the decidua serotina we recognize an outgrowth from the uterine mucous membrane, which, according to Friedlander,¹ consists mainly in a luxuriant proliferation of the connective-tissue elements of the mucosa, the development of its glandular structures being comparatively insignificant. The product of this proliferation, a thick, soft, membranous formation, is largely composed of cells, the so-called "decidua cells." The superficial stratum of the decidua everywhere closely invests the villousities of the chorion, so that, when once fully developed, separation of the two structures, without laceration of tissue, is impossible, and, it also forms the limiting wall of certain vascular channels—the cavernous sinuses—located in the placenta materna; these channels, with the exception of the so-called "sinus terminalis," possess no other walls than the delicate lining of endothelium, the vessels on entering the decidua leaving behind all the other tunics. The chorionic villi, pushing the investing serotina before them, dip into the aforesaid vascular spaces, but do not normally advance beyond the level of the glandular stratum of the decidua, the depth at which separation takes place at the time of labor. Towards the close of gestation the cells of the decidua serotina—and the vera also—fall a prey to that peculiar degenerative process known as fatty degeneration,—Simpson²—the fat infiltration being especially marked in the more superficial strata of the decidua; the organic connections between the decidua and the permanent uterine mucosa are

¹ *Physiol. anat. Unters. über den Uterus.* Leipzig, 1870.

² *Select Obst. Works, I., p. 94.*

thus rendered so frail that even a very moderate force is adequate to lacerate them and effect detachment of the deciduous structures.

Having thus briefly noticed the more important characteristics of the normal placenta, we may proceed to examine the deviations from the normal standard, those more especially which are believed to give rise to preternatural adhesions.

It comports with general experience that, in cases of premature labor and abortion, after the middle period of gestation, detachment of the placenta is not infrequently attended with considerable delay, notwithstanding the uterus apparently contracts with average force; the case, in short, must be set down as one of morbidly retained placenta, yet it is very evident that neither excessive size of the afterbirth, nor irregular contractions of the uterus, nor, of course, atony of this organ can be regarded as the cause of the retention, hence naturally enough, morbid adhesions are suspected to exist, but the most careful examination of the placenta, after expulsion, fails to detect anything pathological in its tissues. Why, then, was its detachment so difficult? In the language of Guéniot,¹ simply because the placenta was "not ripe." The anatomical elements of the decidua serotina had still retained their normal integrity; the process of "fatty degeneration" of these structures, first described by the late Professor Simpson,² and since corroborated by many eminent authorities, had either not yet commenced, or was still in its incipency. That instances of this kind occur also in labor at term, admits scarcely of a doubt; Hegar³ and Guéniot,⁴ for instance, having both met with and recorded cases of this character. In labor, prior to the normal end of gestation, an unripe placenta—absence of fatty degeneration—is the normal condition, and hence to be anticipated, but in labor at term, it—the unripe placenta from absence of fatty degeneration—constitutes the pathological element in the case; in either instance it is liable to occasion morbid retention of the placenta, not, as has been shown, by reason of the presence of neoplastic tissue, simply because of the existence of the "normal" tissues in their

¹ Gazette des Hôpitaux, No. 130, 1874.

² Select Obst. Works, i., p. 94.

³ Path. und Therap. der Placentalretention, p. 44 et seq.

⁴ Gazette des Hôp., Nos. 126-130.

full integrity. But is such placenta likely to resist powerful uterine contractions, or efforts at detachment by the hand of the accoucheur? Considering that the immature placenta is usually expelled under the influence of "good pains," and bearing in mind how readily the normal placental tissue is lacerated, this query certainly is to be answered in the negative. When the adhesions of the placenta are so firm as to resist, especially the latter of the forces alluded to, absence of fatty degeneration alone does not afford a satisfactory explanation of the fact; we are forced to conclude that the organization of the placental tissues is not normal. Having thus arrived at the conclusion that in some instances the morbid adhesions are the result of the development of abnormal tissues in the placenta, it remains to ascertain what these anomalous formations are, and how they are produced. In speaking of the normal anatomy of the placenta the statement was made that the decidua serotina was mainly a connective-tissue product, and largely composed of cells; now under the influence of certain morbid agencies this product, instead of being mainly cellular, assumes a fibrous character. "Fibrous degeneration," as the process is termed by Playfair,¹ takes place, a tissue is produced, the great strength and tenacity of which is familiar to all. Placentæ of a similar character, in which, however, the foetal portion thereof was mainly affected, have been described by Virchow,² under the appellation of "*Myxoma fibrosum placentæ*." Subsequently other investigators, Hegar³ among them, met with and described similar examples of placental degeneration; the process, it is found, rarely involves the entire afterbirth, being usually limited to circumscribed patches of variable magnitude. That a tissue of this character is well calculated to give rise to most formidable adhesions—adhesions which may resist both the contractions of the uterus and the manipulations of the accoucheur—is sufficiently obvious.

In reference to the causation of this anomalous development it is conceded that several agencies may be, and doubtless are, instrumental; the more prominent of these being inflammation, syphilis, and mechanical irritation. Inflammation, however, it

¹ System of Midwifery, p. 377.

² Krankhaften Geschwülste, i., p. 414.

³ P. and F. der Placentarretention, p. 64.

has been said—Whittaker¹—cannot occupy the decidua, this structure being insusceptible of such action by reason of the entire absence of capillaries; but this is not necessary; the inflammatory process need only take place in the subjacent mucous or muscular coat of the uterine wall, when the morbid influence will be readily enough propagated to the decidua, and perverted development result. There certainly appears to exist quite a unanimity of belief among obstetrical writers that inflammatory processes must be regarded as one of the causes of fibrous and other forms of degeneration of the placenta. Syphilis likewise, thanks to the admirable researches of Virchow,² is now very generally held responsible for the occurrence of this, as well as of other morbid formations in the placenta. Mechanical irritation, as from long-continued compression of the placenta between some resisting part of the foetus, the head, for instance, and the abdominal wall, is regarded by Hegar³ as, at least, an occasional cause of the development of fibrous tissue in the placenta, and the writer entertains the opinion that this constituted the remote cause of the morbid adhesion of the placenta in the case recorded at the head of this paper. It will be remembered that the head of the foetus was located directly beneath the placenta; that together with this portion of the uterus it formed the projecting tumor in the right side of the patient's abdomen; that she suffered pain in this locality for many weeks prior to her confinement, and that this part was quite sensitive to touch.

Morbid adhesions of the placenta, though usually the result of abnormal development of the decidua, are by no means always so; they may, as intimated above, arise likewise as the result of an anomalous growth of the chorionic villi. These villousities, instead of penetrating the decidua merely to the level of the glandular stratum, may pierce this layer and even burrow deeply into the muscular wall of the uterus itself—Schroeder⁴—advancing, doubtless, along the uterine sinuses and filling these so completely that extraction, at least without laceration, is found to be impossible. The causes of this perverted develop-

¹ Am. Jour. Obst. vol. iii., p. 229.

² Die Krankhaften Geschwülste, i., p. 477.

³ L. c., p. 73.

⁴ Lehrbuch der Geburtshülfe, 4, auf., p. 402.

ment of the chorion villi are quite obscure. Schroeder¹ holds that syphilis of the fœtus is, in all probability, one of these; the same author also entertains the opinion that inflammation of the decidua (?) may give rise to this hyperproliferation of the chorionic villousities. Calcareous deposits in the placenta, an abnormal production of frequent occurrence, probably never occasion morbid adhesions, unless complicated with fibrous degeneration, hence need not be taken into consideration in this connection.

The statement has already been made that the retention of the placenta, in the present instance, could not have been due to want of fatty degeneration simply; doubtless this constituted a complicating element, but was not the chief factor. Fibrous organization, or degeneration of a diffused character, on the other hand, fully explains all the phenomena witnessed and described. Abnormal proliferation of the chorionic villi of the nature mentioned, and morbid adhesions from this cause, may also have been present, but obviously this must remain a matter of mere conjecture. Whatever may have been the character of the adhesions in this case, it is quite certain, as shown by the entire absence of hemorrhage, that the vascular connection between the placenta and the uterine wall was at no time severed, but remained intact at all points, except, perhaps, the little space near the center, from which locality the few small fragments were torn out.

With these remarks I must needs consider the inquiries in regard to the nature and causation of the adhesions disposed of, and may now proceed to discuss the first of the questions propounded, viz.: "What became of the retained placenta?"

Obstetrical authorities inform us that a retained placenta in labor, at or near term, may be disposed of, or the respective case may terminate in one or other of the following several ways:

1. The retained placenta is expelled naturally, or is removed artificially, fresh and free from all decomposition, after the lapse of a variable period of delay, the act being usually attended with hemorrhage, sometimes alarmingly profuse, at others quite insignificant.

¹ L. c., p. 407 et seq.

2. The retained placenta undergoes decomposition and occasions a fetid discharge, more or less profuse, but does not lead to septic infection; the putrescent placenta, or remnant of placenta, is finally expelled, usually without hemorrhage; the discharge ceases, and the patient speedily recovers.

3. Decomposition of the retained placenta and fetid discharge, as above, takes place, and in addition general septic infection occurs; fragments of putrid placental tissue pass away from time to time; at last the discharge ceases and the patient slowly recovers; or more frequently death ensues while the discharge is yet profuse. And,

4. The retained placenta does not undergo decomposition, does not give rise to purulent discharges, is not expelled from the uterine cavity in any shape, *but is absorbed*.

Examples of the 1st, 2d, and 3d modes of termination are sufficiently common, and are recorded in goodly numbers, so that no special argument is needed to establish the fact of their occurrence. I may, however, in passing, call attention to a few cases of comparatively recent date: Guéniot,¹ in the *Gazette des Hôpitaux*, reports five cases of retention of the placenta; the afterbirth being retained respectively, one, three, five, four, and two and one-quarter days. In the first, the placenta was removed on account of hemorrhage, the patient surviving the operation eight days; death believed to have been due to septic infection and peritoneal inflammation. In the second—a case of Dr. Lignerolles,—several attempts at manual removal of the placenta were made, first by the attending physician, Dr. Lignerolles, and subsequently by Mons. Guéniot, all unsuccessfully, a few small pieces only having been brought away. The patient died within twenty-four hours after the last effort at removal, and three days after her confinement. The autopsy revealed that a hole had been torn in the uterine wall of the size of a five-franc piece, the lacerated strip of utero-placental tissue hanging down into the os uteri; further, that a state of perfect fusion between the uterine parietes and the placenta existed, and that separation of the placenta, even now, without use of knife, was impossible. In the third case, the greater portion of the placenta was extracted shortly after

¹ Gaz. des Hôpit., No. 126, 1874.

the birth of the child ; a small fragment, however, could not be removed, and gave rise to hemorrhage, fetid lochia, septic infection ; five days later, spontaneous expulsion of the retained piece of placenta, speedy improvement, and recovery. Fourth case : placenta retained ; various attempts at removal fail ; copious fetid discharge, large masses of decomposing blood pass from the uterus. Patient succumbs on the fourth day after labor from septic infection. Post-mortem the placenta was found still firmly and universally adherent, the superficial stratum of the free surface being in a state of decomposition. Case fifth : labor at eight months ; placenta adherent ; sundry manipulations for removal are instituted, but fail ; afterbirth is finally expelled spontaneously on the third day after labor, followed by speedy recovery of patient.

Dr. Liégard,¹ in the same journal, reports four cases of retained placenta ; the duration of the retention being brief, viz. : eight, seven, three, and five hours respectively. Expulsion effected in each instance by injection of ice-water into the umbilical vein. Recovery in all.

Dr. Alfred Hegar² has collected and more or less fully described upwards of sixty cases of retained placenta ; the majority of these terminated in expulsion or removal of the placenta *without decomposition* or fetid discharge ; quite a number of others were complicated with fetid purulent discharges, but presented no symptoms of septic infection ; some fourteen or fifteen of the remainder exhibited, in addition to the offensive putrid discharges, unmistakable signs of septic infection and, with but two or three exceptions, all proved fatal. In eight cases out of the whole number terminating in recovery, no well-defined placental cake was ever expelled, but small fragments of placental tissue were recognized in the profuse fetid discharges, which existed in all of them. Many other instances of this character might be cited, but let these suffice.

The fourth mode of termination—absorption, without decomposition, of the retained placenta, in labor at or near term—is not, like those just noticed, of comparatively frequent occurrence, but is, on the contrary, exceedingly rare, so rare, indeed, that many excellent authorities greatly doubt its occurrence—

¹ Gaz. des Hôpit., No. 25, 1875.

² Path. und Therap. der Placentarretention. Berlin, 1862.

Bedford,¹ while others—Churchill, Leishman, Playfair—remain altogether silent upon this question; still others, like Cazeaux,² reluctantly concede its occurrence. Such being the status of professional opinion, at the present day, on this particular topic, I have been at some pains to collect, as far as possible, all the published cases of this character, but after diligent search could find none other than those recorded by Hegar in his monograph on "Placentarretention." For the benefit of those who may not be conversant with this little work, or the originals from which the cases in question are taken, a brief synopsis of the history of each case is reproduced here.

CASE I. (Naegele's).—Patient a primipara; labor at about seven months' gestation; the long, thin cord is torn out from its insertion in the placenta—midwife watches eight days and nights at bedside of patient. For four days moderate lochial discharge, no fœtor; twenty-four hours after labor slight febrile movement; no pain in abdomen; no milk. Eleven weeks thereafter patient menstruates again; subsequently conceives a second time, and after the lapse of fifteen months gives birth to a mature child, the entire labor being normal. Nothing was ever seen of the retained placenta of the first pregnancy.

CASE II. (Villeneuve's).—Patient a multipara; aborted at six months, giving birth to triplets; placenta of last two fœtuses come away spontaneously, but that of the first is retained. On intrauterine exploration placenta is detected in right upper and anterior region of the uterine cavity; cord torn out from its placental attachment. The lochial discharge is less than normally, not fetid; patient is convalescent by the eleventh day after labor, and leaves hospital; twenty days later has an attack of hemorrhage, lasting almost uninterruptedly for eight days, nothing but blood passing away during the time. No discharge of placenta.

CASE III. (F. Y. Porcher's, of Charleston).—Patient a multipara; third pregnancy; labor at term; child born in breech presentation. Immediately hour-glass contraction; placenta retained; hand passed into uterus with difficulty; afterbirth everywhere adherent. Ergot given in full doses; three days

¹ Princip. and Pract. of Obst., 1874, p. 386.

² Theoret. and Pract. Treatise on Midwifery, 5th Am. Ed., f. 7th French, p. 882.

thereafter cord and a portion of membranes pass in a state of decomposition; copious fetid discharge; at three weeks after labor patient convalescent; a month later is seized with pain and a sense of weight in the pelvic region; uterus found low down; placenta felt through open os, still adherent; a week subsequently another paroxysm of pain, os this time closed; a year later patient entirely well. No placenta ever discharged.

CASE IV. (2d of Naegele).—Multipara; labor at term; normal to close of second stage, then hour-glass contraction; retention of placenta; hemorrhage. Thirty hours after labor fetid discharge; removal by hand of about half of placenta; no lochia subsequently. Thirteen weeks later menses return; patient entirely recovered; remaining half of placenta never discharged. Two years subsequently renewed pregnancy; labor this time normal throughout.

These four cases, it is held, may justly be regarded as instances of retention and absorption of the placenta, or remnant of placenta, in labors occurring either at full term of utero-gestation, or at least at a time when the placenta has reached its maximum of development. In addition to these, Hegar¹ cites a number of cases from Velpeau, Solomon, d'Outrepoint, Gabillot, and others, of absorption of retained placenta after labors along the middle period of gestation. Such occurrence, *i.e.*, absorption of retained placenta after abortion, or immature labor, is very generally conceded, but is deemed quite a different affair from absorption of a fully formed placenta. Granted that such difference exists, upon what does it depend? Obviously, it is not owing to diminutiveness, or greater succulency of the immature, as compared with the mature placenta, nor to more intimate connection between maternal and foetal placenta, and thus preservation of the integrity of the latter, but depends, unquestionably, upon the fact already noticed, *viz.*, the existence and maintenance of perfect vascular connection between placenta and uterine wall—no degenerative process having as yet disturbed these structures; the uterus contracts with less force, and above all, less in extent, whence it results that the bond of union between the placenta and uterus remains intact, the nutrition of the placenta goes on, but is, like that of the uterus itself, greatly reduced, fatty degeneration

¹ L. c.

then supervenes, and absorption is rendered possible. Now, all these conditions usually are wanting after labor, near or at term, or are fulfilled to a limited extent only, hence complete or partial detachment, and necessarily decomposition, in case of retention, must follow. But, whenever they are fulfilled, whenever the vascular communication and other organic connections between the placenta and uterus remain undisturbed, then the adherent and retained placenta may be absorbed just as readily after a labor at term as after an abortion. It is then simply because the conditions above set forth are more frequently present after abortions, or immature labors, than after labors near or at term, that retention and absorption of the placenta is of more frequent occurrence with the former than with the latter, and there appear to be no good reasons why a few additional ounces of placental structure may not be just as readily removed without decomposition as the two pounds or more of muscular tissue of the uterus itself, provided only that the vascular communication between uterus and placenta remains undisturbed.

In the case described at the beginning of this paper these conditions were manifestly fulfilled, the history showing that the placenta was everywhere intimately adherent, the vascular communication between it and the uterine wall consequently not interrupted. The placenta did not undergo decomposition, because there was no discharge representative of the products of such decomposition, the serous lochia being well-nigh destitute of solid constituents; it was not discharged, because during the entire nine weeks of my attendance the evacuations from bowel and bladder were rigidly inspected, either by myself or the nurse; the napkins, clothing, and bedding likewise were carefully examined, and nothing of the nature of clots, lumps, shreds, or anything unusual ever discovered; it could not have passed away subsequently, because, after the lapse of the nine weeks, the uterus, on bimanual exploration, was found to be small, of about the average size of a normal non-pregnant uterus, the process of involution being evidently complete. In view of these facts, no other alternative remains but to conclude that the case in question was one of those rare instances of *absorption, without decomposition, of a retained placenta in labor* at term, or more properly, labor past term.

A few words more in regard to the management of cases of morbidly retained placenta. On this subject the profession is somewhat divided in its views, some counselling conservatism, while others recommend the most radical measures; one party deeming it best to wait patiently for spontaneous expulsion, the other claiming that immediate interference is the only proper course. Obviously, with the presence of hemorrhage and consequently a partially detached placenta, radical measures—prompt detachment and removal of the placenta—are demanded; but if hemorrhage does not complicate the case, shall we wait for nature to accomplish the work, regardless of lapse of time, or shall we wait for a limited period only, and then proceed to deliver the afterbirth artificially? It will be found that most modern authorities recommend that, if the placenta is not expelled spontaneously within from fifteen to forty-five minutes after the birth of the child, active measures be instituted; employing first the milder means, and gradually passing on to those more severe in their character; thus, friction over the fundus; external compression, after Credé; moderate traction upon the cord when the uterus is in a state of contraction; injection of ice-water into the umbilical vein; faradization; ergot internally or hypodermically; and lastly, introduction of the hand into the uterine cavity. Of these therapeutic measures, friction over the fundus and external compression especially recommend themselves for safety and efficiency. Traction upon the cord, although still practised more frequently probably than Credé's external compression, is a very inefficient and by no means harmless means for delivery of the placenta, really of use only when this structure is detached and lies loosely over the os internum. With ice-water injections into the umbilical vein the writer has no practical experience, but judging from the encomiums bestowed upon this procedure by Mon. Liégard¹ it would certainly seem worthy of a trial, and that, too, before the uterine cavity is invaded by the hand. Faradization and ergot are indicated in very much the same class of cases, namely, those characterized by a flaccid state of the uterine. No valid objections can be urged against the employment of the interrupted current, but unfortunately, the apparatus, in private practice, is rarely at hand when wanted; ergot, on the

¹ *Gaz. des Hôp.*, No. 23, 1875.

contrary, is generally within easy reach, but its employment is not altogether free from objections, even in instances of atony of the uterus; the main objection being its tendency to occasion irregular—hour-glass—contractions, particularly so when morbid adhesions—from fibrous degeneration, etc.—exist, in which event the resulting uterine contractions will be powerless to effect the detachment of the adherent placenta, and therefore simply occasion its imprisonment and render subsequent intra-uterine manipulations for its removal, in many instances, extremely difficult. Inasmuch, however, as the existence of morbid adhesions cannot well be foreknown, and the drug certainly is indicated in relaxed conditions of the uterus, we are, I hold, justified in employing it under such circumstances, even at the risk of possible hour-glass contraction. Introduction of the hand into the uterine cavity is doubtless still the most efficient means we possess for removal of a retained placenta, but, being a measure of some severity, it should not be resorted to, unless clearly indicated; not, therefore, until other and milder means have been tried and have failed, or under circumstances demanding all possible speed in the evacuation of the uterine cavity, or when no good results can reasonably be expected from any other procedure. Thus the presence of hour-glass contraction almost invariably necessitates the passage of the hand to the imprisoned placenta, by reason of the utter inefficiency of everything else, while the existence of profuse hemorrhage with retention of the placenta does not admit of delay, but calls for the most efficient and prompt procedure at command; again, intrauterine manipulations; slight hemorrhage, or absence thereof on the other hand would only require this measure in the event of failure of other means. All authorities are agreed that the intranuterine manipulations, especially detachment of a morbidly adherent placenta, should be performed with the utmost care, lest the wall of the uterus be lacerated and a perforating lesion produced, it being a notable fact that under such circumstances the uterine tissue is less tenacious than normally; but, obviously, too great timidity must be equally as pernicious as too great rashness, considering how manifold and grave are the dangers to which the puerperal female with a retained placenta in labor at term is exposed. The “golden mean,” here as elsewhere, is manifestly the true

course to pursue ; we should be neither too timid nor too rash ; if the placenta can be detached by any available agency, *compatible with the integrity of the uterus, by all means detach and remove it*, or as much of it as can be thus removed, otherwise leave it to the resources of nature ; just where and when this most desirable level is reached cannot be specified in words, each operator must determine this for himself.

MORPHIA IN CHILDBIRTH.

BY

W. T. LUSK, M.D.,

Professor of Obstetrics, Bellevue Hospital Med. Coll.

THE late discussion before the Obstetrical Society of New York, concerning the effects of morphia administered to the mother upon the unborn infant, is likely to be studied with some concern by the general mass of the profession. On the one hand there was a question of the greatest practical importance offered for solution, and on the other, complete variance of opinion, expressed by recognized leaders in the special department to which the question belonged. *A priori*, both parties had equal reason to believe themselves justified in their opinion. Thus those who claimed that morphia did not affect the infant in utero could appeal to the experiments of Spaeth and Schanenstein with mercury, and those of Fehling with woorara, to show that medicinal agents do not reach the child through the placental circulation ; while those of Gusserow with iodide of potassium, and of Benicke with salicylic acid, could be quoted with equal readiness to prove that foreign substances in the maternal blood readily pass into that of the fetus.

Physiological experimentation had left the special question as to which class morphia belonged an open one. The experience of individuals was therefore invoked to aid toward its settlement. In studying the evidence presented, I confess my own state of mind was one of indecision. Having used mor-

phia extensively in midwifery practice, I failed, like my friends Drs. Barker and Peaslee, to recall any sinister occurrence connected with such use, which, now that my attention was drawn to the subject, I could look back to with regret. Indeed, one patient of mine took upward of thirty drops of Magendie's solution hypodermically on the day of her confinement and for ten days previously; yet the child was active and lively at birth. The assertion, therefore, that "morphia, when administered to the degree of producing its physiological phenomena in the mother, will *invariably* produce a relative condition of narcotism in the new-born infant," was not supported by anything in my own experience. Still I was not prepared to deny the truth of the proposition in exceptional cases, and was led, with a view to arrive at some conclusion satisfactory to myself, to continue the investigation.

Now, in the first place, it seemed to me that all cases in which morphia was given for convulsions, or irregular uterine contractions, should be barred out of the inquiry, as it is perfectly well known that these conditions are peculiarly injurious to fetal life, even when no morphia is employed. Dr. Pulling's cases were suggestive, but not available as evidence. In his first, he finds the fetal heart beating 141 times per minute. Five days later, the patient being narcotized, the frequency of the fetal pulse varied from 119 to 124. But twenty-four hours later, and, according to Dr. Pulling, sixteen hours after the effects of the narcotic had passed off, the pulsations ranged only between 124 and 128. In his second case, the frequency of the fetal heart was 133. On the following day, after the patient had taken ninety minims of laudanum for false labor pains, the fetal heart was 118. Now "false pains" is rather a loose term, but usually is employed to designate cramp-like contractions of the uterus, and these always diminish the frequency of the fetal heart. It is very desirable that a new series of experiments should be made, following up the hint contained in Dr. Pulling's observations.

But the four cases of Dr. Thomas and the seven of Dr. Gillette are not to be disposed of by mere criticism. The high professional standing and perfect integrity of both gentlemen puts upon their evidence a specially high value. A repetition of their experience ought to exclude morphia as a thera-

penential resource in labor, excepting in extreme need. The gravity and importance of the question at issue must be my apology for renewing experiments to aid in the formation of a conclusion.

As Dr. Gillette gave the detail of his cases, it became possible to follow in his footsteps. I therefore asked my friend Dr. F. E. Beckwith, of the Nursery and Child's Hospital, to ascertain for me in two series of cases, in one of which morphia was to be given, and in the other the labor was to go on naturally, the following points: 1. Average number of respirations after birth. 2. Average number of heart beats in the first stage of labor and after delivery. (During the second stage of labor the heart action is too irregular to make observations upon it of any value.) 3. The average size of the pupils of the new-born child in sunlight and in gaslight, and their sensitiveness to variations of light. 4. The presence or absence of asphyxia in the child, the cry after birth, and the tendency of the child to sleep during the first two hours after delivery. To estimate the effect of the labor itself upon the child the following points were to be noted regarding the mother: 1. Duration of the second stage of labor. 2. Weight of child. 3. The pulse, respiration, size of pupils, and, where morphia was used, the degree of narcotism of the mother as evidenced by the sleep induced.

In the following tables Dr. Beckwith furnishes the result of his observations. The care and accuracy with which he performed his task calls for the highest commendation. The record of each case occupied upward of forty minutes. Upon these observations the value of this paper depends.

By reference to the foregoing tables it will be seen that asphyxia occurred three times, viz.: once in eight cases in the normal series, and twice in eleven cases in the morphia series.

The slight asphyxia and cyanosis in case 4, Table I., was unquestionably due to the prolonged second stage of labor (three hours).

Number 6 of Table II. was a breech case, with arms reflected upward. The asphyxia was caused by compression of the cord during the delay in the delivery of the head. The pupils, the pulse, and the respirations exclude any theory of narcosis. (Compare with case 4, Table I.)

TABLE I.—NORMAL.

Prepared by Dr. F. E. Beckwith, of the Nursery and Child's Hospital.

Number of Preg.			Duration 1st Stage.		Duration 2d Stage.		Sex and Position.	Condition of Infant.					Condition of Mother.				Medicine Adminis-tered.	
			Age.					F. H. in first Stage.	F. H. after Birth.	Resp'n after Birth.	Weight of Infant.	Size of Pupils.	Asphyxia and Cyanosis.	Pulse at end of 3d Stage	Resp'n at end of 3d Stage	Pupils at end of 3d Stage		Sleep during Labor.
1	1st	20	4	Y. Hrs.	Hours.	1 1/4	F. L.O.A.	128	140	60	7 lb 11 3/4	Sunlight Sensitive 1/16 in.	Cried immediately after birth; no asphyxia. Cord bled when cut; no cyanosis.	64	28	Sunlight 3/32 in.	No sleep.	Nothing.
2	1st	16	5		3		M. R.O.P.	120	168	44	9 lb 13 3/4	Sensitive Gaslight 3/32 in.	Cried immediately; no asphyxia. Cord bled freely; no cyanosis.	88	28	Gaslight 3/16 in.	"	"
3	1st	27	26		3/4		F. L.O.A.	128	160	feeble, 40	3 lb 13 3/4	Sensitive Sunlight 1/16 in.	Cried feebly as soon as born; no asphyxia. Cord bled freely; no cyanosis.	92	32	Sunlight 3/32 in.	"	"
4	1st	30	16		3		M. L.O.A.	156	160	56	7 lb 6 3/4	Sensitive Sunlight 3/32 in.	Did not cry during first 2 min. after birth; slight asphyxia. Cord did not bleed; slight cyanosis.	60	28	Sunlight 3/32 in.	"	"
5	4th	27	6		3/4		F. R.O.A.	....	156	64	8 lb 2 3/4	Sensitive Sunlight 1/16 in.	Cried immediately; no asphyxia. No cyanosis.	52	24	Sunlight 3/16 in.	"	"
6	1st	20	72		1		F. L.O.A.	112	124	32	7 lb 4 3/4	Sensitive Gaslight 3/32 in.	Cried immediately; no asphyxia. No cyanosis.	92	28	Gaslight 3/16 in.	"	"
7	1st	26	13		6		F. R.O.P.	....	164	64	6 lb 5 3/4	Sensitive Sunlight 1/16 in.	Did not cry until slapped; no asphyxia upon nates. Cord bled freely; no cyanosis.	92	24	Sunlight 3/32 in.	"	21 gr. chloral 3 1/2 hrs. before birth, 10 gr. 2 hrs. before.
8	1st	27	7		1		F. L.O.A.	124	156	44	6 lb 7 3/4	Sensitive Sunlight 3/32 in.	Cried immediately; no asphyxia. Cord bled; no asphyxia.	72	24	Sunlight 3/16 in.	"	Nothing.
Average			Hours 2.05				Average	Average 128	Average 153.5	Average 50	Average 7 lb	Average Gaslight 3/32 in. Sunlight 1/16 in.		Average 76.5	Average 27.	Average Gaslight 3/16 in. Sunlight 3/32 in.		

In number 11, Table II., the moulded, elongated head and overlapping sutures pointed to compression as the cause of asphyxia. In this case the pupils were the *largest* recorded in the two series.

In both cases 6 and 11 the heart beat steadily at birth, and slapping the nates sufficed to make the children cry. No artificial respiration was necessary, and no exceptional drowsiness was observed subsequently. I requested Dr. Beckwith to make special note of the disposition of the child to sleep after delivery. He found that in normal cases the children often slept steadily, if undisturbed, from two to eight hours. None of the infants, to whose mothers morphia was given, slept unusually sound or long. The average frequency of the pulse and respiration and the average size of the pupils were somewhat greater in the morphia series than in the normal one. This difference was probably accidental, and would have disappeared by an extension of the number of cases.

It cannot be objected that the quantities of morphia given by Dr. Beckwith were insufficient, for in seven cases twelve minims of Magendie's solution were used hypodermically, in one case twenty-four minims, in another twenty-five minims, and in one case three-fourths of a grain of morphia was given by the mouth, and twenty-four minims of Magendie's solution were injected under the skin. In this last case, while the mother's pupils were manifestly contracted, those of the infant were unaffected.

In these comparatively large doses, it is interesting to note that, though eight of the eleven women slept, and for the most part soundly, from the morphia given, none of them showed signs of labored breathing or cyanosis. The respirations, the pulse, and the size of the pupils appeared to be only moderately affected. The results in Dr. Gillette's cases are certainly unusual with the doses he employed.

In perfectly normal cases Dr. Beckwith did not find the pupils uniformly dilated. They showed the same sensitiveness to light that exists in the adult. They were large in a dim light, and small in a bright one. In three infants Dr. Beckwith dilated the pupil with sulphate of atropia. In each the pupil measured one-fourth of an inch, representing the extreme of dilatation. In three infants he contracted the pupils with

TABLE II.—MORPHIA.—Prepared by Dr. F. E. Beckwith, of the Nursery and Child's Hospital.

Number of Prog.	Age.	Duration 1st Stage.	Duration 2d Stage.	Sex and Post- tion.	Condition of Infant.						Condition of Mother.				Medicine Adminis- tered.
					F. H. 1st Stage.	F. H. after Birth.	Resp'n after Birth.	Weight of Child.	Size of Pupils.	Asphyxia and Cyanosis.	Pulse at end of 3d Stage.	Resp'n at end of 3d Stage.	Pupils at end of 3d Stage.	Sleep during Labor.	
1 2d	Y. 22	1 45		F. L.O.A.	....	156	48	8 lb 12 $\frac{2}{3}$ 3	Gaslight Sensitive $\frac{1}{16}$ in.	No asphyxia. No cyanosis. Did not cry during first minute after birth, after- wards lastly. No caput.	76	18	Gaslight $\frac{2}{32}$ in.	Slept lightly during last 30 min. of sec- ond stage.	12 m Magendie's so- lution 45 min. before delivery, hypoder- mically.
2 1st	Hrs. 22	11	Hrs. 1	F. R.O.A.	136	156	44	6 lb 15 3	Sunlight Sensitive $\frac{2}{32}$ in.	No asphyxia. No cyanosis. Child cried immediately after birth. Cord did not bleed. Caput $\frac{1}{2}$ in. thick.	68	20	Sunlight $\frac{2}{16}$ in.	Slept a little last 25 min. second stage.	12 m Magendie's sol. 30 min. before de- livery.
3 1st	26	18	Hrs. 1 $\frac{3}{4}$	M. L.O.A.	136	164	56	7 lb 14 3	Sunlight Sensitive $\frac{1}{16}$ in.	No asphyxia. No cyanosis. Did not cry during first 2 minutes after birth. Cord did not bleed. Caput in- significant.	92	30	Sunlight $\frac{2}{32}$ in.	No sleep.	12 m Magendie's sol. 18 minutes before delivery.
4 1st	21	24	Hrs. 6 $\frac{3}{4}$	F. L.O.A.	144	180	44	7 lb 14 $\frac{2}{3}$ 3	Sunlight Sensitive $\frac{2}{32}$ in.	No asphyxia. No cyanosis. Did not cry until slumped upon nates. Cord did not bleed. Caput $\frac{1}{2}$ in. thick.	92	24	Sunlight $\frac{1}{2}$ in.	Morphia arrested the pain. Slept 5 $\frac{1}{2}$ hrs., 6 hours before de- livery; 15 min. after second stage began.	12 m Magendie's sol. 6 hours before de- livery, 15 min. after second stage began.
5 1st	18	6	Hrs. 1	F. L.O.A.	132	160	72	6 lb 11 $\frac{1}{2}$ 3	Sunlight Sensitive $\frac{1}{16}$ in.	No asphyxia. No cyanosis. Cried 20 minutes after birth. Cord bled freely. Caput $\frac{1}{2}$ in. thick.	100	32	Sunlight $\frac{2}{32}$ in.	No sleep.	12 m Magendie's sol. 15 min. before de- livery.
6 3d	32	5	Hrs. 1	F. L.S.A.	132	160	56	6 lb 7 3	Gaslight Sensitive $\frac{2}{32}$ in.	Slight asphyxia, due to ar- rest of circulation, from compression of cord. No cyanosis. Cord bled a lit- tle. Did not cry until slumped upon nates, then lastly. No other efforts to excite resp. necessary. Breech swollen.	84	20	Gaslight $\frac{2}{32}$ in	Slept soundly 45 min- utes.	12 m Magendie's so- lution 4 hours be- fore delivery; also 12 m 45 minutes be- fore delivery.
7 1st	18	3	Hrs. 1 $\frac{1}{2}$	L.S.A.	136	168	44	6 lb 3 $\frac{3}{4}$ 3	Sunlight Sensitive $\frac{1}{16}$ in.	No asphyxia. No cyanosis. Cried immediately. Cord did not bleed. Breech swollen.	96	32	Sunlight $\frac{2}{32}$ in.	No sleep.	12 m Magendie's so- lution 30 min. be- fore delivery.

8	1st	26	36	7½	L.O.A.	132	168	72	6 lb 1½ 3	Cloudy Sensitive 9/32 in.	No asphyxia. No cyanosis. Cried immediately. Cord did not bleed.	92	32	Cloudy 1/16 in.	Slept between pains, which were severe and frequent.	¼ gr. morphia 34 hrs. before delivery. ¼, 17 hrs. before, 12 m. Magendie's 13½ hrs. before, 7½ hrs. before ¼ gr. morphia. 30 min. before 12 m. Magendie's solution The three ¼ gr. doses by mouth.
9	1st	23	5	1	F. L.O.A.	120	168	68	6 lb 10 3	Sunlight Sensitive 9/44 in.	No asphyxia. No cyanosis. Cried immediately. Cut end cord bled freely. (1 gr. sol. atropia, 2 gr. to 1 3, was dropped in eyes. In 5 min. pupils dilated to ¼ in. in diameter.) (See *.)	92	20	Sunlight 9/32 in.	Slept none after first dose. Slept soundly after second dose. Sound asleep during and after third stage.	12 m. Magendie's sol. 4 hours 40 minutes before delivery. Also 10 m 1 hour before delivery.
10	4th	23	26	2	F. L.O.A.	124	160	56	6 lb 13 3	Sunlight Sensitive 9/16 in.	No asphyxia. No cyanosis. Cried immediately. Cord bled freely.	92	20	Sunlight 9/32 in.	Slept between pains, 4 hours.	12 m. Magendie's, 7 hours before delivery.
11	1st	22	7	2	M. L.O.A.	120	156	68	7 lb 9 3	Gaslight Sensitive 9/16 in. (See +.)	Partially asphyxiated. No strong respiratory effort, until nates were slapped and face fanned briskly for 3 min. Then respiration became deep and frequent, and remained so. Considerable cyanosis of face, which disappeared, as soon as breathing began. (See +.)	68	32	Gaslight 9/16 in.	Slept, without a uterine contract, 1 hour after first dose, and between the pains 6 hours more; was a little drowsy when 2d dose was given. After 2d dose slept between the pains until delivered, and through and after third stage.	15 m. Magendie's sol. 8 hours before delivery. 10 m. 2 hours before delivery.
						Average 131.2	Average 163.2	Average 57.1	Average 7 lb 7.5	Average Gaslight 9/16 in. Sunlight 9/14 in.		Average 86.5	Average 24.5	Average Sunlight 7/64 in. Gaslight 9/16 in.		

* Atropia was dropped at the same time in another infant's eyes. Pupils dilated equally, and in some length of time in both infants. This case was tested so because it presented the smallest pupils of any one examined. Child did not sleep any more than is usual after birth, nor any more than the others. Pupil was not contracted by opium.

+ The pupils were 9/16 in. until respiration became frequent and asphyxia and cyanosis had gone, then they measured 9/32 in. only, one half former size. They were normally sensitive to light.

+ Cord was promptly cut and allowed to bleed 4 3, to relieve congestion of brain. Artificial respiration unnecessary. Caput succedaneum ½ in. thick. Parietal bones over-
 apped. Head elongated by moulding. Asphyxia and cyanosis were due to passive congestion of brain. Condition of pupils indicated such a cause, and not morphia narcosis

sulphate of eserine. The extreme of contraction was one thirty-second of an inch.

In conclusion, it is apparent that, so far as deductions can be drawn from a limited number of observations, there is no reason to apprehend any *direct* effect to the child from morphia hypodermically administered to the mother during labor. The propriety of its use, therefore, is to be determined by pure obstetric considerations. When given to meet some urgent need in the mother, it probably conduces indirectly to the welfare of the child.

Since the discussion Dr. Barker has twice used the hypodermic syringe (Mag. sol. m x.) in the second stage of labor. In both instances the children cried lustily at birth.

CONGENITAL OCCLUSION AND DILATATION OF LYMPH CHANNELS.

BY

SAMUEL C. BUSEY, M.D.,

Washington, D. C.

Prof. of the Theory and Practice of Medicine, Medical Department of the University of Georgetown; one of the Physicians to the Children's Hospital; Physician to the Louise Home.

(With 5 woodcuts.)

(Continued from April number, p. 253.)

EXCEPTING the few cases of increased nutrition, in which the soft and bony structures were equally enlarged, no constant modification of the arterial system is shown. Occasionally the arteries are found normal in connection with either lipomatous or fibromatous degeneration; but usually they are very much atrophied, sometimes absent, and never enlarged. Nevertheless, the connection between the supply of arterial blood and analogous alterations of the tissues is established by the results in those cases, of which No. 4 is an example, in which ligation of the main arterial trunk supplying the affected part is followed by arrest, and sometimes by cure of the growth. Venous blood and lymph must, to a certain extent, be regarded as the derivatives of arterial blood, and only so far as it is the source supplying

these fluids can it hold any causative connection with the alterations of nutrition which affect unequally the constituent tissues of the hypertrophied part. The transuded serum of venous blood is poorer in nutritive material than lymph, and connective tissue is a lower grade of organization than the adipose. From the fluid plasma all the tissues originate, and lymph is the plasmatic fluid minus the nutriment abstracted by the tissues it has traversed, and plus certain waste-products of nutrition. Œdematous fluid "consists" (Wagner) "in a pathological accumulation of quantitatively and qualitatively changed lymph in the lymphatic radicles" and spaces within the tissues, and "œdematous parts chiefly or wholly consisting of connective tissues" show a separation of the fibres by a fluid "sometimes very poor, sometimes very rich in lymph corpuscles;" its only "essential and constant elements, but in very variable quantity, are lymph corpuscles."¹ Such accumulations of lymph may result from interruption of the current of the lymph through the lymph-channels proper, or from the transudation of the blood serum through the venous radicles, in consequence of some impediment to the return current of the blood; in the latter event it would contain the salts, fat, and

¹ Mr. Jonathan Hutchison, in a clinical lecture on certain forms of solid œdema of the legs (Lond. Lan., Aug. 26, 1876), enumerates seven classes of cases. In the first group he includes all cases of passive dropsy occurring in connection with mere debility; in the second, all œdemas due to positive impediment in the heart and in the third group, all œdemas from renal disease. In these forms the œdema is always symmetrical. In the fourth group he includes all cases due to mechanical obstruction to the return venous current, such as pregnancy, abdominal tumors, and compression of the iliac veins. To the fifth group belong all cases where actual disease of the venous trunks is present, in which class it is customary to include phlegmasia dolens, but which Mr. H. thinks is more likely caused by lymphatic than venous obstruction. The sixth group comprises those cases in which the œdema is wholly or chiefly due to lymphatic obstruction. Mr. H. believes that the lymphatic system takes a large and the chief share in the production of œdema, and that the vessels are frequently occluded by inflammatory thickening. In such cases the œdema is non-symmetrical, not always connected with enlarged or devastated glands, and is not easily distinguished from chronic inflammation of the cellular tissue. The direct communication of the lymph vessels with the areolar interspaces affords ample facility for œdematous accumulations. In the last group he includes all cases caused by erysipelatous and elephantoid inflammations, and by thrombosis of the venous capillaries. He cites several cases caused by syphilitic inflammation of the lymphatic vessels.—*Med. News and Library*, Vol. XXXV., p. 1, 1877.

urea in the same proportion as present in the blood, but the albumen, fibrinogenous substance, and corpuscular elements in much less quantity. In the former case the accumulated fluid would represent the lymph proper, a fluid far richer in the elements of nutrition, though varying, according to the exigencies of nutrition, in the proportion of fat and corpuscles. The fat and connective tissues are in structure the same, the former being distinguished from the latter by the presence of fat in the cells, which, under certain conditions, may again (Virchow) disappear, and the adipose will be reduced to simple connective tissue. Several cases, previously cited, exhibit various stages of transition of the adipose into connective-tissue hypertrophy, and, as a rule, these transitional conditions were only exhibited in cases in which some abnormal condition of the venous system was present. This fact becomes important, and supplies additional evidence in confirmation of the view that the impoverished lymph transudation is the genesis of the connective-tissue hyperplasia, though it does not exclude the probability that occasionally, and especially in protracted cases of lymph stasis caused by impediment to the onward flow of the lymph, similar development may not take place, for the lymph proper may be or become impoverished—too poor in fat, but abundantly rich in the elements essential to the growth of connective tissue.

In this connection I may also cite the cases of Quinke and Weichselbaum.¹ The first was a case of chylous ascites, the extravasation of the chyle into the walls of the intestines and peritoneal cavity having been caused by the closure of the chyle vessels by inflammatory thickening of both folds of the mesentery, and transformation of the interposed adipose tissue into "tense connective tissue." The chyle vessels were engorged with chyle exactly to the union of the intestines with the mesentery, not injected in the latter; the mesenteric glands were small and without chyle retention. In Weichselbaum's case there was no extravasation, but stasis of chyle in the chyle vessels of the mesentery and hypertrophy of the interposed adipose tissue of the mesentery. The hypertrophy had assumed the tumorous form, and was thickly interspersed with cavernous spaces, communicating with the chyle capillaries and filled

¹ New Orleans Med. and Surg. Jour., March and May, 1877, Cases 43 and 50.

with chyle. The structural changes found in the mesentery, in the cases respectively, were present in connection with opposite conditions of the chyle vessels. The transformation of the adipose tissue into "tense connective tissue" took place in Quincke's case, in which the chyle capillaries were occluded so that none of the fluid could permeate the vessels which traversed the mesentery. In Weichselbaum's case the extraordinary development of the adipose tissue of the mesentery was found in connection with stasis of chyle and its retention in the dilated vessels and cavernous spaces of the mesentery. It cannot be asserted that the retention of chyle in the mesenteric vessels, in Weichselbaum's case, was the cause of the excessive adipose formation, nor that its absence from the vessels, in Quincke's case, was the cause of the transformation of the adipose into connective tissue, but the singular juxtaposition of the morbid phenomena justify such a conclusion, and is corroborative of the teaching of cases herein reproduced.

New-formed fatty tissue consists in the increased size or multiplication of the fat cells, or in the transformation of connective-tissue corpuscles, and may be diffused or circumscribed. When circumscribed, it not unfrequently assumes the tumorous forms, with regular or lobed surfaces, and divided by partitions of connective tissue into variously shaped masses. These tumors are most frequently located in the subcutaneous tissue, and may be either firm or soft, according as the connective tissue or fatty elements predominate,¹ or when the vessels are developed in excess may assume the form known as the lipoma teleangiectodes. Lipomatous formations, says Busch, when existing, submit to no limitation of growth, but may increase in proportion to or advance more rapidly than the rest of the body.

Fatty atrophy may take place under various conditions—the retrograde change occurring either through serous atrophy of the fat cells, or by multiple division of the nucleus, and formation of young cells which become migratory or connective-tissue cells.

Fatty metamorphosis may affect normal tissues or pathological formations, and is invariably the result of disturbance

¹ Wagner, *Manual of General Pathology*.

of the circulation and nutrition. The function of the part invaded is either impaired or wholly abolished.

Fatty and connective tissue new-formations are interchangeable conditions—that is, either may succeed to the other. The lipomatous transformation is, however, most frequently found in the areolar form of fibromata, which usually attacks the skin and subcutaneous cellular tissue, and consists of fibrous bundles and spaces filled with a serous fluid. It usually affects the connective-tissue corpuscles, but rarely the basis substance. The stellate connective corpuscles of Virchow are the lymph lacunæ of Recklinghausen, and, if not identical with, contain the branched cells of Klein, which constitute a system of anastomosing and communicating tubes and canals—the canalicular system of the body, through which the lymph flows. Klein (New Orleans Med. and Surg. Jour., Vol. IV., p. 327) derives the fat cells of the serous membranes from transformed branched cells, and holds that the nourishment normally provided for the production of lymphoid cells is consumed in the formation of fat cells.

These considerations lead me to the conclusion that the lipomatous and fibromatous formations and degenerations, exhibited in the foregoing cases of giant growth, are the pathological results of a stagnation of lymph—"the non-efflux of the nutritive fluid." This stasis may be occasioned by conditions which affect the lymph channels, or which primarily involve the circulatory apparatus, causing excessive transudation of the blood serum, or both systems may be concerned either proximately or remotely. Under conditions which favor either or both forms of new-formation, the process may progress so far as to produce atrophy of all other soft tissues, and, under further conditions favorable to such transformation, either may subordinate the other. These conditions cannot be definitely defined, but many circumstances induce me to believe that the transuded blood serum—a fluid comparatively poor in the corpuscular and fat elements—is principally concerned in the genesis of the fibromatous forms, and lymphangiectasis in the lipomatous forms. In support of this view, the following cases may be cited :

CASE XLVIII.¹—Augusta B., aged 10 years. The right leg was

¹ Freiberg, Virch. Archiv, Vol. XL., p. 353.

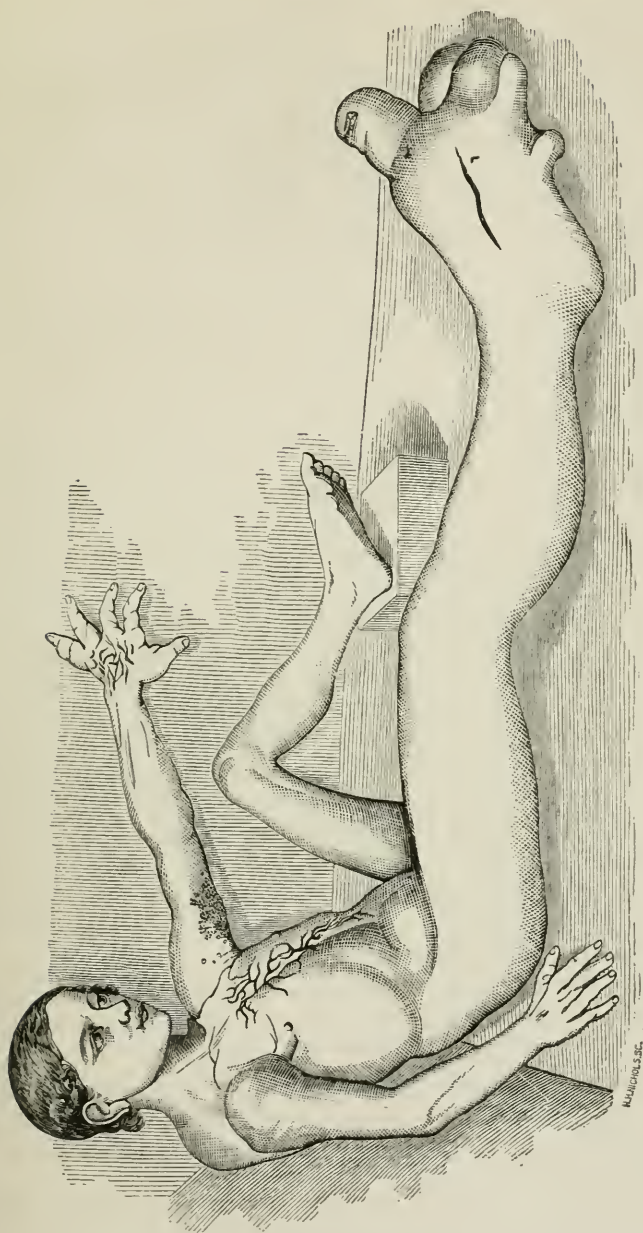


FIG. 31.

nearly as large as the rest of the body, and appeared like the leg of a well-nourished, strong man. The foot was colossal for even such a leg, and the toes were enormously enlarged. The bones of the foot were everywhere enlarged. The color of the leg was a fresh flesh, the foot had a purplish hue. Temperature of leg normal, foot cool. The skin appeared shining; was neither dry nor flaccid, not traversed by ectatic veins nor oedematous, possessing normal resistance, and showed no indications of disease. On the dorsum of the foot a large venous cord coursed longitudinally. The comparative measurements of the legs, as shown in Fig. 31, were as follows:

	<i>Right.</i>	<i>Left.</i>
Circumference of middle of thigh.....	16 inches.	9 $\frac{1}{2}$ inches.
“ above patella.....	14 $\frac{1}{4}$ “	7 “
“ across patella.....	14 “	8 $\frac{1}{2}$ “
“ around lig. patellæ.....	13 $\frac{1}{2}$ “	7 “
“ middle of calf.....	15 $\frac{1}{4}$ “	8 “
“ above malleoli.....	10 “	6 “
“ of foot, posterior third....	18 $\frac{1}{4}$ “	6 $\frac{3}{4}$ “
“ points of little and great toes	18 $\frac{1}{4}$ “	5 $\frac{3}{4}$ “
“ great toe.....	6 $\frac{1}{4}$ “	2 $\frac{3}{4}$ “
Length from trochanter to edge of heel....	28 $\frac{1}{2}$ “	21 “
“ “ edge of heel to point of great toe	11 $\frac{1}{2}$ “	6 $\frac{1}{2}$ “

A large lipoma, sharply defined, semisolid and elastic, covered with normal integuments, occupied the space between the upper halves of the scapulae; a second one was located between the sixth and ninth dorsal vertebrae, flatter and softer than the other, but measuring more in circumference; a third was situated over the crest of right ilium, measuring six inches antero-posteriorly. The posterior wall of left thorax was stained with a diffuse superficial naevus, and in the centre of the sternum lay a network of varicose cutaneous veins, which extended downwards to the umbilicus; a similar one occupied the anterior external side of the left humerus. The lymph glands upon left side of neck and along inferior maxilla were hard, movable tumors, united in strings, and sometimes crowded in groups. Between the left nipple and shoulder were two uneven, small, flat, movable tumors, and in the axilla and upon the inner side of the left arm was a network of hard, nodulated, movable, thin cords, over which the skin was occupied by light yellow colored vesicles, from hemp-seed to bean size. Upon the inner and posterior side of left forearm were S-formed, bead-like rows of small, flat, semisolid nodules, from hemp-seed to bean size, which were lost in the region of the plica cubiti, and extended to the volar side of the wrist-joint; several were movable over the subjacent tissue, but fixed to the skin; they were not fixed and extended into the deeper tissues. Upper third of left forearm measured in circumference 8 inches, right 7. Left wrist 5 $\frac{1}{4}$, right 5 $\frac{1}{2}$. The skin over the thickened portion was of a dirty grayish-blue or brownish color. The panniculus of left hand underneath the normally colored skin, traversed by dilated

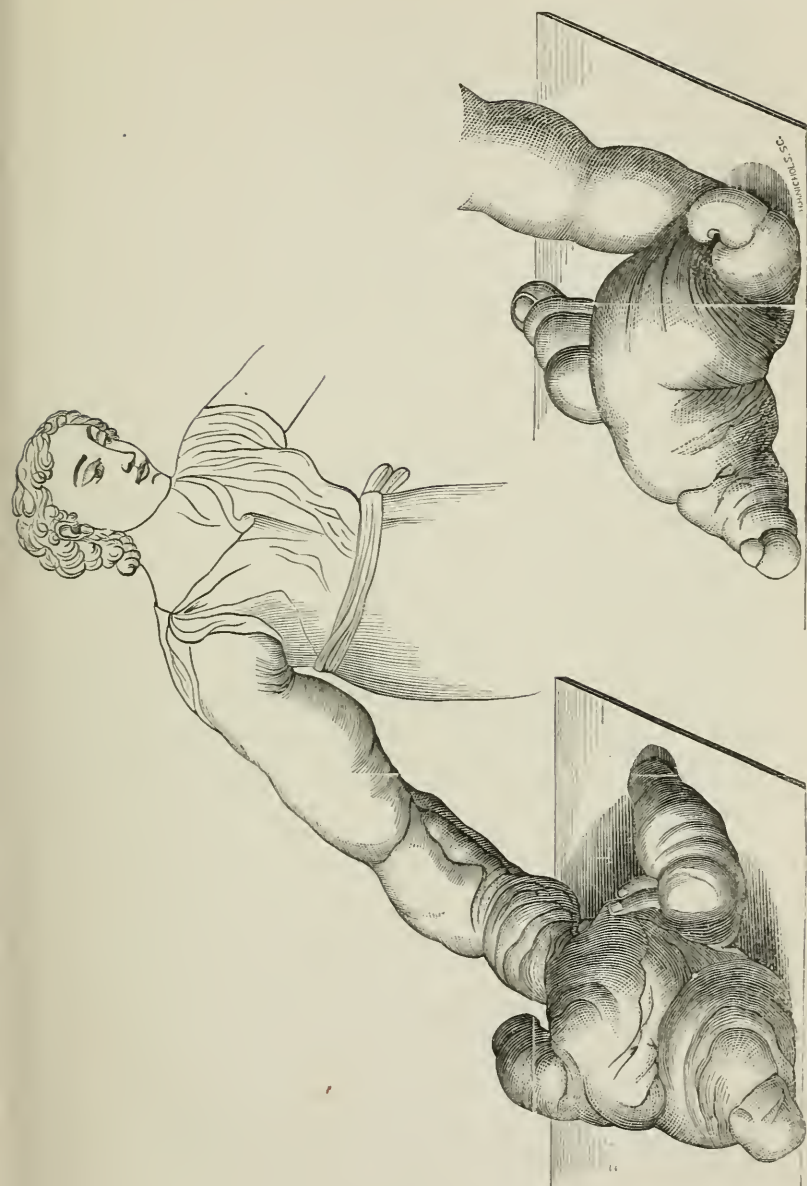


FIG. 32.

veins, was everywhere hypertrophic and of a semi-fluid softness, with a fatty rugged surface. The left hand was much larger than the right, and not proportionately formed.

These abnormal conditions were observed at birth. The child was otherwise healthy, nursed, grew fast, and walked at eleven months of age. Excepting an attack of sickness during dentition, the child continued well until four years old, when it was seized with a chill, followed by fever, pain and redness of the left thorax and left arm, accompanied with swelling, vesicular formations, lasting about eight days, terminating in resolution, with desquamation of the skin of the affected part. These attacks, which sometimes resembled lymphangitis, and at other times erysipelas, recurred at varying intervals during the succeeding years, sometimes limited to the thorax or arms, and at other times extending over both. During one of these attacks the *nævus* upon the dorsum of left hand developed, and several times large blood vesicles were formed, which ruptured. After each attack the part affected remained enlarged and continued to increase in size. The right arm and hand also became involved in these inflammations, and finally both arms and hands grew to the enormous proportions represented in Fig. 32. During the earlier years of these recurring inflammatory attacks, the enlarged right leg was free from them, but subsequently it became subject to periodic inflammations; nevertheless it continued to grow in all its dimensions from birth to her death, which took place in her tenth year, of phthisis pulmonalis. No autopsy.

CASE XLIX.¹—J. C. D., aged 7 years; healthy. When two and a half years old, the enlargement of the leg, which did not extend above the knee, and was most apparent above the ankle and on the inner and front aspect of the tibia, was first observed. The skin was normal, only tightly expanded over the tissues beneath, which was always increased by standing or walking. The limb gradually enlarged, and the tumefaction extended upwards, involving the entire thigh, until it measured as follows:

Upper third of thigh.....	16 inches.
Middle of thigh.....	15½ "
Knee-joint.....	13 "
Below knee.....	12 "
Calf.....	11 "
Lower third of leg.....	11 "
Above ankle-joint.....	7¾ "
Instep.....	9 "
Base of toes.....	6½ "

When the system was out of order, the leg always enlarged. During the period of growth, herpetic spots appeared at various times on the leg, foot, and scrotum, and, when the leg had reached its largest development, a small pearly-looking vesicle appeared on the upper

¹ Day, Trans. Clin. Soc., Lond., Vol. II., p. 104, 1869.

part of the penis, which finally ruptured and discharged from time to time a milky-looking fluid, which exhibited the following characteristics: Faint sickening odor, salt-like taste, alkaline reaction. There was no uniformity in rapidity of coagulation. The clot bore the closest resemblance to that of blood, except being softer and destitute of red corpuscles. It contained a large quantity of fatty matter and fibrin, a molecular baselike chyle, and numerous pale cells resembling white blood corpuscles.

A patch of yellowish-white vesicles, seeming to contain a cheesy matter, appeared on the upper part of the leg, and, subsequent to the rupture of the vesicle on the penis, a cluster of similar vesicles appeared on the dorsum of the foot. The discharge was always followed by reduction in the size of the limb, and was sometimes so copious as to produce great debility, confining him to bed. Occasionally, after the disease had continued for several years, he was subject to attacks of inflammation limited to parts of the affected limb, which was attended with high fever, loss of appetite, burning pain, and redness of the part. Finally, in consequence of the recurring discharges, his general health became seriously impaired, characterized by great weakness and prostration. Sometimes the discharge in the beginning was pure lymph, changing, after it had continued for a while, into a chylous fluid, exhibiting the characters before described.

CASE L.¹—M. X., aged 17. Health always good. On the 9th of March, 1852, while playing, he noticed that a liquid, at first colorless, but soon acquiring a milky tinge, was flowing from a definitely located spot on the inner and lower part of the left thigh, where were found, after careful examination, very small elevations in considerable number, and depressible. Some days after, M. Demarquay observed the liquid at first almost colorless, with a slightly muddy tint, and passing to a yellowish-white, jetting with considerable force from little granulations situated upon and around an elevation, three or four centimetres in extent, depressible, and like a varix, extending in a slight curved line from the anterior to the inner part of the thigh, as shown in Fig. 33. This elevation became more evident upon walking, and diminished with rest. Several discharges took place during the following six months, and on November 1st one occurred which lasted nine hours. A portion of this was collected in a vessel, and soon coagulated like blood. In the centre of the mass a clot formed which appeared composed of a series of reddish filaments swimming in the midst of an abundant serum. M. Lebert declared the fluid to be lymph. Subsequent to this the varix increased in volume, and the little granulations, before described, became transparent vesicles, which, when pricked, discharged copiously a similar fluid. Another series of vesicles appeared on the anterior surface of the same thigh, and in the groin there was a small venous varix. The affected thigh increased in size in excess of the sound limb. In this case there was dilatation of a lymphatic vessel, and also of the superficial network,

¹ Demarquay, *Mém. de la Soc. de Chir. de Paris*, Tom. III., p. 139.

in two well-defined points of the thigh. The boy continued to lose large quantities of lymph without any impairment of his general health. Compression above and below the point from which the lymph flowed gave rise to a jet of appreciable duration; pressure below did not arrest the flow.

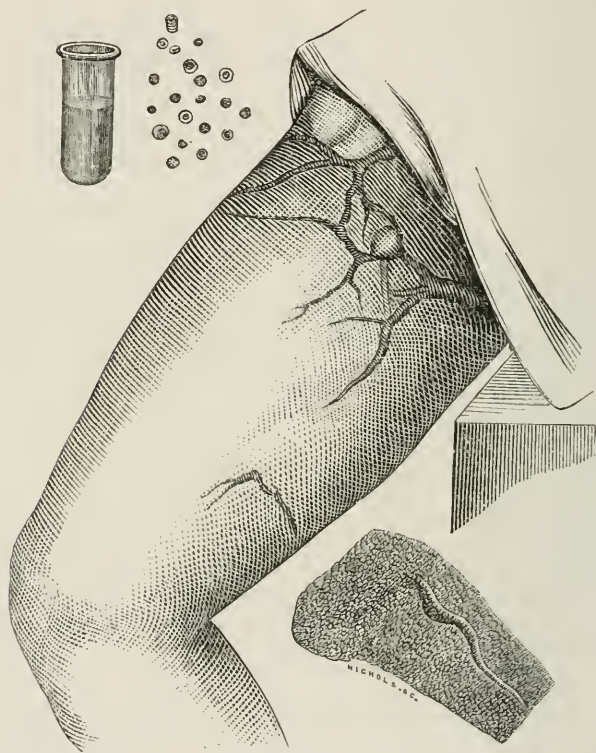


FIG. 33.

CASE LI.¹—A female infant, weighing seven pounds. Right leg twice the size of the left, surface slightly purplish, with here and there a bluish tinge. The whole limb, from Poupart's ligament in front, and around by the crest of the ilium behind, down to the toes, was one mass of twisted and contorted varices. The vermicular prominences rolled round and round the leg in a singular manner, as represented in Fig. 34.

Motion was perfect, though obviously painful. The transpiration

¹ Paterson, *Edinburgh Med. Jour.*, vol. xvi., p. 1012.

from the limb was so abundant and exhaustive that the child grew weak from day to day. On the fifth day large blebs appeared on each side of the ankle, and the color and general appearance changed; it became darker; the copious transudation continued, the exhaustion increased, and death took place on the ninth day after birth.

Examination of the limb proved the varicose prominences to be enlarged lymphatics, filled to distention with a milky, serous fluid. From their abrupt beginning in front, around the buttock and down the limb the lymphatics were twisted, corded, and rolled together. Around the crest of the ilium and along the course of Poupart's ligament the tissues were condensed, resembling tight bands stretched. There was no appearance of glandular or other structures. The muscles, glands, blood-vessels, etc., beneath were natural and no distended lymphatics could be discovered in the deep tissues. The tis-



FIG. 34.

sues from the iliac crest to the pubis seemed like a mass of hardened cellular tissue. No anastomotic connection between the superficial and deep-seated lymphatics could be discovered.

CASE LII.¹—F. N., aged 19 years. When one year old the right thigh was larger than the left, more or less so according to the use of the limb. When four years of age, after a short walk, without unusual exertion, the right thigh was observed to be double the size of the left. The swelling extended from the groin to the knee, was not sensitive or painful, and was covered with normal colored skin. It remained, now larger, now smaller, but occasioned no inconvenience.

¹ Thilesen, *Zeitschrift f. klinische Medicin*, Bd. 7, p. 447, 1856.

After a while the skin upon the anterior and inner aspect and towards the scrotum thinned in several places, forming small shining spots slightly elevated, which ruptured spontaneously and discharged a yellowish-white, opalescent, somewhat tenacious fluid, which, upon exposure to the air, coagulated into a jelly-like mass. When the rupture occurred while walking, the fluid would jet out for several feet, and sometimes a pint or more was lost, which would be followed by a sense of great exhaustion, paleness, and languor. These discharges recurred three or five times during a year, and continued for thirteen years, during which time the swelling extended to the leg and foot, and similar thinned spots formed upon the plantar surface and between the toes, but none appeared upon the leg. When ten years old, without discoverable cause, violent pains around the right trochanter, extending across the right gluteal region and down the thigh and leg, supervened. At the same time, the extremity from the groin to the sole of the foot began to enlarge more rapidly, the thigh attained the circumference of the body of an adult, and the foot and leg increased in proportion. Subsequently, a large abscess formed in the gluteal region, which after a time ruptured and discharged during several months large quantities of pus, and after it healed the thinned spots developed into transparent vesicles, the size of peas, containing a clear liquid, the integument thickened and felt firmer, the epidermis roughened, the furrows deepened, and the papillæ enlarged. The limb enlarged throughout its whole length, and numerous vesicles formed upon the anterior and inner surface of the thigh, and upwards towards the groin and scrotum, reaching one and a half lines in height, transparent and filled with a watery fluid. The contained fluid could be pressed back, but immediately returned upon the removal of the pressure. One of the larger cysts was opened and the evacuated fluid proved, on microscopic examination, to be lymph. Finally, pleuritis set in, and the patient died.

Autopsy.—Skin hypertrophic throughout all its layers; more so upon the anterior and inner part of the femur. Throughout the hypertrophied portion was a large meshy net of dilated lymph-vessels, some of which had attained the size of goose-quills. The most superficial vessels could be traced into the cysts projecting from the skin, and they were ampulla-like dilatations of the extreme ends of these vessels, with thinning of their walls. Upon the lymphatic trunks situated outside of this extremity nothing abnormal could be discovered. The lumbar muscles were atrophic. The connective tissue of the lowest portion of the leg was infiltrated with pus, the articular cartilage of the lower end of the tibia was destroyed, the ends of the bones carious; the ligaments destroyed, tarsal bones carious. Tubercular deposits in both lungs beginning to soften; small caverns in left lung. Tubercular deposits in liver, spleen, and other abdominal organs.

CASE LIII.¹—A laborer, aged 22. Right thigh began to swell a

¹ Hilton, London Lancet, 1866, Vol. II., p. 37. Acquired. Introduced for comparison.

year previous to admission to hospital, first at the upper part and then gradually downwards to the toes. Skin not changed in color; no pain in the part. Small openings appeared about the middle of inner side, from which a milky fluid exuded every three or four weeks, and his leg and foot began to grow and became very firm. Before admission the thigh was enlarged; throughout its whole extent, and, since, the scrotum and penis became involved in the swelling. Left leg quite natural; appearance strumous; dissipated. The right leg is one-third larger than the left, of natural color and temperature; imparts to the touch a feeling like a female mamma distended with milk. There was a sensation of hard irregular cords lying in a brawny structure. No œdema. Towards back of thigh, and scattered over the lower half of its extent, were numerous vesicles, varying in size from a pin's head to that of a pea. No redness surrounded them. From them the milky fluid was discharged, and when tapped it exuded drop by drop. The fluid separated on standing into a rounded coagulum, smooth and shining, and a watery looking fluid. It contained bodies resembling lymph-corpuscles, granules and fatty molecules, albumen, fibrin, but no sugar.

The cases 48, 49, 50, 51, 52 and 53 present very many points for discussion, some of which will be deferred until other cases presenting similar conditions have been introduced. The case of Friedberg (48) is, perhaps, the most remarkable instance of colossal giant-growth on record. Chassaignac's case (38) of congenital hypertrophy of the extremities of the right side, with multiple sanguineous blotches and varices, and another case of enlargement of the arm, referred to by Friedberg, are somewhat analogous. A description of the latter case was found by Meckel von Hemsbach in the posthumous papers of his uncle, and represents the length of the right arm to be such as to reach down to the middle of the leg. All the tissues, including the bones, were hypertrophied, and the increase was most striking towards the lower end of the extremity. The patient of Chassaignac affirmed that he had three times as much force in the members of the right side as in those of the left; in Friedberg's case the power in the affected limb, though not commensurate with the enormous development, was increased; in Paterson's, in which the abnormality was limited to the superficial lymphatic vessels of the right lower limb, there was no increase of the muscular tissue, though motion was perfect, but painful, and never voluntary. In Smith's case of nævoid elephantiasis (9) the muscles of the diseased limb were healthy and of normal size, the blood-vessels were enlarged and temperature increased. The

patient could move the limb, but could not raise it. In Reid's case (35) the excessive growth of the member was due to the relative increase of the muscles and bones. The adipose was not appreciably increased, but the cellular and cutaneous tissues were developed uniformly with the muscular and osseous. The arterial system of the hypertrophied limb was enlarged, and the temperature was augmented. The patient could move the arm, but pronation and supination were imperfect. In the cases of excessive adipose formation, mobility and power were uniformly impaired, and in those cases where the observation was made the temperature of the part was below the normal. In such cases sensibility was diminished in consequence of atrophy of the nerves of the part.

The constant co-existence of nævi, both in the giant formations and lymphatic developments, is a somewhat singular phenomenon. Chassaignac's case was complicated with multiple sanguineous blotches and varices on the affected limb. In Adams' case a superficial nævus was located on the affected limb. In Gherini's case, the skin was red, with circumscribed bluish spots. In Friedberg's case an ectatic venous cord coursed along the centre of the dorsum of foot, and nævi formed upon the hypertrophied hand during the progress of the disease. The skin of the hypertrophied arm in Reid's case of increased nutrition of the left thoracic extremity presented a number of red patches, some very large. In Smith's case the surface was extensively stained with a dusky red subcutaneous nævus. In Demarquay's case a small nævus developed in the groin during the course of the affection, and in my own case (No. 1) several nævi were present, and the vein, as shown in Fig. 3, coursing between the cluster of vesicles and the anterior margin of the limb, is enlarged, and presents a tortuous outline due to increased length. In the two cases (Friedberg and Demarquay) in which nævi were developed during the progress of the disease, inflammatory processes preceded the nævoid developments, and it is not improbable that the congenital nævi may have been formed during inflammatory processes taking place during intra-uterine life. In the congenital cases, in which the proliferation of tissue has resulted from stasis of lymph, there are no manifest or objective inflammatory phenomena, but a condition remains which finds its cause in changes already effected, which

produce stagnation or a supply in excess of the capacity of the effluent vessels. Smith suggests that there are three forms of congenital hypertrophies, differing as the altered nutrition may depend upon an augmented supply of blood or lymph, or, as he erroneously supposed, of chyle.

By comparison of the several parts of the enlarged and elongated extremities in these cases, it is found that the abnormal increase of the length increases towards the distal end of the extremity. In Friedberg's case the leg increased in length faster than the thigh, the foot faster than the leg, and the toes faster than the foot. This phenomenon was also exhibited in several of the cases of partial growth, confined to a portion of an extremity, most notably in the case (45) reported by Curling. The character of the growth in the cases of Friedberg, Chassaignac, and Meckel, differed. In Friedberg's the leg was everywhere full and rounded, whereas in Chassaignac's the hand was larger in proportion than other parts of the arm, and in Meckel's case the arm was irregularly formed.

The development of the right leg and of the upper extremities in Friedberg's case exhibits very different phenomena. The leg seems to have been an instance of true hypertrophy, and the probability is that all the tissues were uniformly hypertrophied. Power, though not commensurate with the increased volume of the limb, was preserved, and motion, necessarily awkward and incomplete, was never painful. The arms were irregularly enlarged, and the hand grew in excess of the other portions. These irregularities in the growth of the upper extremities were due to circumscribed and irregular formations of the connective and adipose tissues. The disease manifestly began during foetal life. Friedberg suggests that the conditions may have originated from some affection of the vaso-motor nerves; or from impediment to the circulation in the lymph-vessel, produced by a swollen lymph-gland or other tumor; or from a morbid composition of the blood, and consequent infiltration and proliferation of tissues; or from inflammation of the skin and subcutaneous connective tissue, lymph-glands, and vessels. The dilatation of the cutaneous veins upon the inner side of the left arm, the hemorrhagic vesicles, the grouping of the evidences of disturbed circulation around the left clavicular and sternal regions, the enlargement of the chain of lymph-

glands along the left inferior maxilla, and on the left side of the neck, the formation of a network of hard, nodulated, movable thin cords, over which the skin was occupied by light yellow vesicles, and the other evidences pointing to morbid conditions of some part of the lymphatic system, suggest probable obstruction to the flow of blood in the left innominate vein, which extended its influence over the adjacent portions of the lymphatic and venous systems. The case presents the co-existence of venous teleangiectasis of the skin, dilatation of superficial veins, ectasia of lymph-vessels, lipoma, and diffuse proliferation of the adipose and connective tissues.

In Day's case there can be no doubt that the disease had its origin in some derangement of the lymphatic circulation, and Dr. Day was correct in ascribing the overgrowth to the retention in the affected parts of lymph, which he regarded as a nutritive fluid.¹ In this opinion Paget² and Broadbent, who examined the case when presented to the Clinical Society, and Drs. Sanderson³ and Callender, to whom it was referred for a more careful examination, concurred. The growth of the limb was due to the infiltration of the fibrinous fluid into the subcutaneous cellular tissue. As the child could resist more strongly with the right than with the left leg, it is probable the muscles were increased in size. The committee were satisfied that the bones were also enlarged.

So far as the observations can be relied on, the cases of Day, Demarquay, and of Mr. Hilton, in which similar phenomena were present, though in the latter the condition was acquired, the direct relation of lymph stasis to these developments is established, for in each case the chemical and microscopic examination and physical properties of the fluid leave no doubt as to its nature. But the case of Thilesen is even more conclusive.

The continued presence and increased growth of the tumor in the latter case, often varying in size, and unaccompanied with change of color, pain, or sensitiveness, exclude any possibility of the presence of either acute or chronic hyperæmia, and the absence of any lesion referable to the blood vascular system

¹ London Lancet, Vol. I., 1849, p. 462. ² Ibid., Debates before the Clinical Society.

³ Trans. Clin. Soc., Lond., Vol. II., p. 113.

excludes any connection of the enlargement with venous stasis. On the contrary, the presence of meshes of dilated lymph-vessels, their direct communication with the cutaneous vesicles, the development of the cicatricial spots into vesicular formations, and the rapidity of the growth in those parts most abundantly supplied with capillary lymph-vessels, and, furthermore, the first appearance of the swelling in the region very rich in networks of lymph-capillaries, show conclusively that the alteration of the nutrition of the parts was due to some defect in the lymph-circulation. The swelling followed the course of the large superficial lymphatic branches, ascending from the foot and leg and running along the vena saphena, and of the lymph-vessels proper of the thigh, emanating from the rich network upon the inner and posterior aspect, and penetrating the entire tissue of the integument down to the fascia, and also those sending branches upward towards the superficial inguinal glands, and encircling the inner and external half of the thigh. Unlike Friedberg's case, cases 49, 52, and 53 were unaccompanied with any inflammatory process, œdematous infiltration, or phlebectasis, but in Paterson's case (51), which differed in so far that the varicose lymph-vessels were on the surface of the extremity, and could not be traced in anastomotic connection with the deep-seated vessels, there was a profuse transudation of a watery fluid. There was no lesion of the blood-vessels. The fluid was lymph, but poor in nutritive elements, and the only change observed in the tissues was hardening and condensation of the cellular tissue in circumscribed localities.

In Thilesen's case the changed growth was without inflammatory concomitants, and manifestly due to the retention and altered elaboration of lymph. A serous infiltration may be caused by hydræmia, mechanical impediment to the circulation of the blood, especially in the veins, or from defective absorption. In either case a change in the nutrition of the parts may ensue. The formation of the vesicles, the development of the cicatricial spots into vesicles, the lymphorrhagia, the chemical and microscopical characters of the discharged fluid, and the post-mortem appearances, leave no doubt in regard to the lymphangiectasis, but other conditions were present during the progress of the case, which Thilesen insists are sufficient to determine the presence of a lymphatic varix. Phlebectasis is ex-

cluded by the absence of pain, of dilatation of the superficial veins and changed color along the varicose veins, and of a single hard cord along the course of the affected vein ; by the non-appearance of œdema in the neighborhood of the ankle and on the dorsum of the foot during the earlier stage of the disease and its gradual extension upwards. The infiltration in phlebectasis results from increased transudation in consequence of increased blood-pressure in the venous radicles and their dilatation, or from interrupted venous circulation. The accumulated fluid is consequently watery, poor in solid constituents, and the resulting swelling would present all the characteristics of ordinary œdema. Absorption may be normal, or perhaps increased, and with rest of the affected limb the intumescence would probably disappear entirely, or diminish. In consequence of the poverty of the fluid the changes in nutrition are very slow, and the enlargement partakes more of the nature of an anasarca than an hypertrophy ; and finally, phlebectasis is usually connected with some constitutional affection or distant local disease, and attacks the most distal parts, where the circulation is least supported by the muscles. Lymphangiectasis is usually found in circumscribed localities, where the networks of lymph-capillaries are most numerous distributed. The swelling is more diffused, not in the form of single hard cords, is more resistant, and the surface is unchanged. It usually extends downwards, and is not so much influenced by continued rest and the posture of the affected limb. In lymphangiectasis there is also an accumulation of fluid, resulting from diminished absorption or interrupted lymph circulation. The fluid consists of the normal pre-existing parenchymatous fluids, the nutritive juices continually conveyed thither, and partly of the fluids consumed by the functions of the parts and saturated with organic débris. It is, however, more abundantly supplied with organic elements, as well of the progressive as retrogressive metamorphosis, with albumen and fibrinous substances, than the accumulated fluid in phlebectasis and ordinary œdema. The tumor, therefore, says Thilesen, "offers characteristics from the beginning different. Formed of a more consistent, coagulable, and partly organizable material, it possesses greater consistence, is nearly compact to the touch, which will increase as the fluid undergoes peculiar changes during its reten-

tion in the parts." The development is peculiar, not altogether unlike phlegmasia and scleroma, and similar to Virchow's lymphatic hydrops, which more frequently than the ordinary oedematous fluid, if, indeed, this ever does, becomes inspissated and is assimilated, leading to hypertrophy. Thilesen attributed the pus formation to over-distention and accumulation of organizable material without corresponding power of assimilation, whereby a large part of the mass remained in a lower degree of development—in the form of pus-cells. The pus collections necessarily partook of the nature of cold abscesses, and were located in the connective tissue. This, he also maintains, constitutes another distinctive feature of the case, for pus formations in phlebectasis usually begin in the coagula formed within the varicose vein, is associated with acute symptoms, and may result in purulent absorption.

This group of interesting cases may be properly followed by another group exhibiting lymph varices under very different conditions.

CASE LIV.¹—A child, aged three years, had phymosis and adhesion of the prepuce to the glans penis, also along the raphé of the scrotum, extending from an inch in front of the anus to the glans penis, an elevated sinus with transparent walls of about the size of a crow's quill, closed at both ends, and nearly filled with a whitish cream-like fluid, which could be seen to pass from one point to another when pressure was made.

CASE LV.²—A man, aged 29. Entered hospital for urethritis following suspicious coitus. Had always carried, on the posterior portion of the raphé of the scrotum, two little enlargements, of soft consistency, variable size, globular, of transparent white, less colored than the neighboring skin. They attained the size of a pea, opened spontaneously, and from them oozed an opaline, whitish, milky liquid. From the fistulous openings a variable quantity of lymph was discharged, which could always be increased by pressure from behind. Later new vesicles formed at the root of the penis and underwent the same evolution. The prominences and fistulae were ranged along an antero-posterior line; a projecting cord, irregular, knotted, brownish, extending from the anus to the base of the scrotum, at which point it presented two larger fistulous vesicles. Further on the cord was less perceptible, but to the touch its irregular and unequal form was appreciable. At the level of the prepuce there was an increase of volume. The fluid was lymph.

¹ Hamilton, Buffalo Med. Jour., Vol. VI., p. 11, 1850-51.

² Zambaco, L'Echo Medical, Tom. III., p. 66, cited by Binet.

CASE LVI.¹—A man, æt. 28. Had upon the inner surface of the right thigh, close to the side of the scrotum, about two dozen clear, small vesicles, very similar to herpes vesicles, a little larger than pin heads, in part confluent, scattered over a space not larger than a hand, which he had first observed in his tenth year. Between the vesicles, which were in close proximity to each other, a connecting duct could be distinctly demonstrated, which upon pressure projected with moderate tension, whilst at the same time the vesicles diminished. The discharge, which recurred several times during a year, and continued sometimes three days, presented under the microscope all the characters of lymph. It was increased by pressure made upon the inguinal region, but only appeared guttatum.

CASE LVII.²—A boy, æt. 18. While quietly sitting in school, felt a liquid trickling down his leg from the genitals, which continued five hours. It was a milk-white fluid, and ceased spontaneously. After six months the discharge recurred, and afterwards was repeated every three or four weeks. Müller, of Würzburg, whom he consulted, observed upon the scrotum a multitude of pale yellow vesicles, more upon the right than upon the left. From one of the largest which he punctured a milk-like fluid was ejected in a jet, which upon chemical examination proved to be lymph. Subsequently, in the presence of Brüninghausen, Textor, and Schöulein, one of the vesicles was nipped with scissors, while the patient was in a horizontal position, whereupon a yellowish, odorless, tasteless, lymph-like fluid was discharged, which, after continuing to flow for one hour, changed into a milk-like fluid. In the yellow fluid, after standing a day, a yellow cake floated, which appeared like a membrane arranged in layers, and resembled jelly; beneath it was a cake of darker color. In the milk-like fluid a cake also formed, and beneath it an albumen-like membrane of the thickness of a knife. The discharged fluid was pronounced lymph. This condition continued until he reached the age of fifteen, then the scrotum became suddenly inflamed, red, very painful, and enlarged to three times its size. The inflammation extended to the perineum and adjacent skin; a large tumor formed between the scrotum and anus, which subsequently ruptured and continued to discharge a considerable quantity of watery fluid. In consequence of these continual losses his strength gave way and he died of phthisis pulmonalis.³

CASE LVIII.⁴—A boy, aged 10, a Brazilian, had upon the prepuce an opening, from which, after the removal of a small occluding

¹ Communicated to Gjorgjevic by Prof. Gault. *Archiv f. klin. Chir.*, Langenbeck, Bd. 30, p. 674.

² Wiedel, *Inaug. Abhandlung*, 1837. Müller, *Hufland's Jour.*, Feb., 1822, p. 81.

³ It is possible that cases 56 and 57 may belong to the acquired forms. This is, however, doubtful, and hence their introduction here.

⁴ Hensen, *Archiv f. die Gesamt. Physiolog. des Menschen und der Thiere*, Bd. X., p. 94, 1875.

scab, was discharged a fluid slightly colored red from the presence of red blood-corpuscles, and which after standing became milk-white. The scrotum, without being very much enlarged or otherwise degenerated, had upon its surface numerous white vesicles, from which, when punctured, poured a milk-white fluid, sometimes in very great quantities. The fluid discharged through the preputial fistula came from a varicose lymph-vessel, and as was shown by compression proceeded from the root of the penis. The fistula was supposed to be connected by dilated vessels and degenerated glands with chyle-containing trunks, because of the character of the fluid, which was lymph mixed with chyle. It was slightly alkaline, and after standing deposited white coagula, here and there dotted with red spots, soft, and not compact, having the form of a bag containing a white fluid. In the fluid lymph-corpuscles were sparse, but there were numbers of granules, which ran together, forming fat drops. It had a faint, but not disagreeable odor. Cream formed upon its surface. It contained albumen, watery and alcoholic extracts, fat, and cholesterine. The quantity of fat varied with the amount of fatty-food ingested.

The varices in cases 54, 55, 56, 57, and 58, so far as could be determined by exploration, were limited to the superficial lymph-vessels, which feel under the finger, when of the cylindrical form, like "hard, knotted, flexible" cords; when anipular like rounded tumors, unattached to the skin, are depressible and resume their form when the pressure is removed. It is not possible to recognize varices of the deeper system of lymph-vessels, but such a condition may be inferred when, without (Phillipe Aime David) any appreciable cause, the enlargement of a limb is associated with a varicose condition either of the plexuses or subcutaneous vessels insufficient to account for the tumefaction of the limb. To the consideration of the forms and causes of these varices I will again recur, when other cases have been reproduced.

CASE LIX.¹—In his paper on Makroglossia, Virchow refers to the very singular case he observed in a new-born calf, where, in consequence of thrombosis of the external jugular vein, the mouth of the thoracic duct was occluded, and nearly all the internal organs were dilated to the utmost by ectatic lymph-vessels filled with a slightly sanguinolent fluid. The intestines especially

¹ Virch. Archiv, Vol. VII., p. 130. This case is an illustration of the effect upon the lymph-vessels connected with the main trunk, of any interruption to escape of the chyle from the thoracic duct. This, together with other cases which belong to the acquired forms, will be discussed in the paper appearing in the *N. O. Med. and Surg. Jour.*

were covered everywhere with broad bead-like canals, arranged so closely together that the intervening tissue could be scarcely recognized.

CASE LX.¹—A specimen obtained by M. Amussat from the body of a youth aged 19 years. During life the boy carried in each groin a large tumor, which was supposed to be double inguinal hernia, and for which he had worn a truss. Suddenly, in the morning, having the previous day made a long journey on foot, he was seized with acute pains under the right breast, and in the folds of the groins, difficult respiration, dry cough, cephalalgia, fever, and lancinating pains in the tumors. This condition became aggravated, and after some hours of intense suffering the patient died.

Autopsy, twenty hours after death. — Numerous spots on different parts of the body; putrid decomposition; the skin generally ecchymosed; that of the lower extremities of a deep violet color. A thin membrane covered the tumors. After removing the membrane, a knotted sac, irregular like the spermatic vesicles, was discovered. The sac contained purulent matter.

The abdominal cavity contained a large quantity of sanguinolent serum, but no pus; no trace of peritonitis;

on the left side the cyst containing the pus extended in the crural sheath to the inferior third of the thigh; on the right side the purulent collection did not pass so low, but pressed under the crural ring.

The right pleural cavity contained pus and red serum; the left



FIG. 35.

¹ Cited by Breschet, *Le Système Lymphatique*, Paris, 1836, p. 260.

side but a small quantity; right lung engorged with black blood and froth, adherent at its upper part.

After having turned out the thoracic viscera diseased lymphatic vessels were discovered. Some were as large as quills. The entrance of the thoracic duct into the subclavian vein was recognized. The mass of dilated and twisted vessels extending to the iliac fossæ was dissected out, and is represented in Fig. 35.

The iliac and crural masses of lymphatics were insufflated and unravelled, and it was discovered that the hernial tumors were enormously dilated lymphatic vessels. The iliac ganglia of glands had disappeared, and seemed to have been replaced by lymphatic vessels. No direct communication with the veins was noticed.

The heart, arteries, and veins, the liver, pancreas, kidneys, and bladder were normal. The vesiculæ seminales¹ were large and flabby; vessels very much injected; persistent arborization; a small quantity of serum in the ventricles of the brain.

The following case, somewhat analogons to the last, has been reported by the late Prof. Drinkard,² of this city. The hernial tumor was discovered in the cadaver of a very black negro on the dissecting-table; consequently it cannot be determined whether the condition was congenital or acquired.

CASE LXI.—The tumor occupied nearly all the superior part of the groin, being situated rather more to its outer than its inner side; its upper boundary slightly overlapping Poupart's ligament; ovoid in shape; about four inches in its long diameter, by three and a half in its vertical diameter; baggy in appearance, the skin loose and sacculated towards the inner and inferior portion. To the touch, the tumor, at first mistaken for a femoral hernia, was soft, doughy, inelastic, its contents yielding to pressure, but slowly returning when it was removed. It appeared in some parts more compact and consistent than in the rest.

On dissection a thickened superficial fascia was exposed. From the meshes of both of its layers protruded the cellulo-adipose tissue of the region. The tumor presented no connection with either the crural or inguinal ring, and appeared like a mass of cellulo-adipose tissue, interspersed with lymphatic glands evidently undergoing fatty degeneration, and presenting here and there, over its dissected surface and through its substance, patches of a pale rose color, resembling cellular tissue infiltrated with blood serum, and bearing in some points a closer resemblance to fresh muscular tissue.

¹ Several writers have referred to Amussat's cases, and one to his case of dilatation of the lymphatic vessels of the spermatic cord. I have failed to find such a case, and suppose the error has grown out of this reference to the condition of the vesiculæ seminales.

² Amer. Jour. Med. Sci., Vol. LVI., p. 436.

Dr. Drinkard refers to another case which presented decided similarities to his, which he saw in the service of M. Nélaton (Hôpital des Cliniques), in 1863, and which the latter denominated glandular hypertrophic tumors, which are to be distinguished from those formed of "varicose lymphatics and exude on incision a limpid lymph." In regard to this case Nélaton remarked as follows:

"The first idea given by the tumor is that it is formed by the testicle, which has become deviated in front of the abdominal aponeurosis, and an omental hernia has followed the testicle, which would give to the tumor the peculiar sensation experienced on palpation."

This, however, he excluded, for the reason that no pedicle traversed the inguinal canal.

In Drinkard's case the course of the lymphatics of the limb, leading to the tumor, was marked by bluish-black lines, which gave the limb a marbled aspect.

M. Trélat¹ refers to another case, of a young man upon whom M. Nélaton operated by excising a lymphatic tumor. He says:

"The diagnosis being uncertain, an incision was made over the mass, when a considerable quantity of thickish milk-like fluid escaped, leaving only irregular flaps, and some beaded filaments, which were removed. The patient, a robust man, was seized with rigors and symptoms of purulent absorption, and died. The tumor on the opposite side, which had not been operated on, was injected by M. Sappey, and was shown to consist of a network of varicose lymphatic vessels."

The succeeding case, reported by M. Trélat,² though not certainly congenital, exhibits conditions more strikingly resembling those found in Amussat's (60) case, than either Drinkard's or Nélaton's. The tumors in this case were mistaken by Trélat, Nélaton, and by the physicians of l'île Maurice for hernial sacs, and their true nature was not suspected during the lifetime of the patient.

CASE LXII.—A youth, when 15 years of age, discovered a small enlargement below the left groin, and soon afterwards, while performing gymnastic exercise, he was seized with severe pain in the

¹ *Gaz. des Hôpitaux*, July 5, 1864, and *Amer. Jour. Med. Sci.*, Vol. XLIX., p. 247.

² *Gaz. des Hôpitaux*, July 5, 1864, and *Amer. Jour. Med. Sci.*, Vol. XLIX., p. 246.

right side, which was supposed to proceed from an inguinal hernia. This was reduced and a truss applied, but the region above the pad remained enlarged, especially after walking or exertion. The tumor on the right side descended lower than on the left, but the latter reached as far upwards as the orifice of the inguinal canal, and was lobulated. The right tumor was more projecting, more regular, and softer. The skin was unchanged in color; its surface was regular, normal, and it was movable over the tumors. The swellings were movable over the deeper parts, were soft, could be compressed, felt like lipomata, and were reducible.

Subsequently,¹ in consequence of a subcutaneous abscess, a fistula was established at the level of the fold of the nates of the left side, about five centimetres from the anus, but did not communicate with the intestine. A few days after an operation for the radical cure of this fistula, the two inguinal tumors became painful, exquisitely sensitive, accompanied with a group of grave symptoms, under which the patient rapidly sank and died.

Autopsy.—The right tumor was situated, in greater part, under the cribriform fascia, in front of the aponeurosis of the psoas and abductors, consisted of lobes approximating each other, was definitely bounded above, below, and at the sides, but behind communicated with the deep lymphatic vessels. From it was discharged, in great abundance, a rose-colored fluid. No hernia could be discovered, but varicose lymphatic vessels occupied the inguinal canal and the superior portion of the cord.

Upon removal of the peritoneum from the posterior abdominal wall, there was observed along the iliac vessels a mass of wrapped conduits rolled together, directed generally from below upwards. This condition existed on both sides. Towards the columns of the diaphragm these two masses approached, and were probably blended together under the diaphragm. These masses were formed by the dilatation of lymphatic vessels, and resembled exactly the design given by Breschet of the condition found in the case of Amussat. See Fig. 35.

In this connection I reproduce the cases of Petit and Aime-David, in neither of which was the diagnosis of lymph varices verified.

CASE LXIII.²—A student for a year had noticed, more particularly after fatigue, a swelling in each groin, which was accompanied with some pain, extending down the thighs. Examination showed tumors in both groins without any change in the color of the skin. The tumors extended into the inguinal canals, were painful to the touch; the pain extended along the saphena, which region presented the characters of angioleucitis. The child left the lyceum and returned

¹The completed history of this case is to be found in No. 114, Sept. 29, 1864, p. 454, of the *Gaz. des Hôpitaux*.

²Petit, *Gaz. des Hôpitaux*, 1864, p. 482.

in eight days, carrying a double hernia bandage. The former condition returned; the tumors doubled in size; the limbs became œdematous and benumbed.

CASE LXIV.¹—Mulatto, about 30 years of age. In consequence of repeated angioleucitis a very extensive enlargement of the legs developed. At the internal region of the thighs there were present prominent tumors consisting of dilated lymph-vessels. The tumors were uneven, elastic, transparent, and under pressure receded into the abdomen.

Aime-David refers to another case observed by M. Denis, in which the tumors presented were analogous to those found in the patient of Petit. The patient also carried a double hydrocele.

(To be continued.)

CLINICAL CASES.

A CASE OF SIMULTANEOUS ENTRANCE OF BOTH HEADS OF TWINS INTO THE PELVIS.

BY

J. H. CHURCHILL, M.D.,

Cross River, Conn.

(Reported by W. S. TODD, M.D., Ridgefield, Conn.)[†]

THE accompanying letter explains itself. It has been kindly written at my request, and is of special interest in reference to Dr. Reimann's article in the January number of this JOURNAL. It will be noticed that the labor was accomplished by the mother without instrumental assistance. The Doctor fails to state that strenuous and long-continued efforts were made to resuscitate the second child, but without avail. The weight of the twins was $7\frac{3}{4}$ and $8\frac{1}{4}$ pounds. This must make the ninth case in which "the head of the first child presented together with the head of the other child." (Reimann, l.c.)

¹ Aime-David, Inaug. Thesis, Paris, 1865.

CROSS RIVER, Jan. 30, 1877.

DR. WM. S. TODD.

DEAR DOCTOR: —In response to your request I send you a brief account of my case of "Simultaneous Entrance of both Heads of Twins into the Pelvis," as additional to those presented by Dr. Reimann, of Kiew.

Mrs. —, aged 23, primipara, one year married, was confined Jan. 1, 1877. The first of labor presented no unusual features, the case progressing well through it and into the second stage, nor was the favorable progress interrupted until a head, presenting in the first position, had been delivered. Here a new feature was introduced in the shape of a second head (also in a vertex presentation) pressing against the thorax of the first child. This head continuing to advance, and the condition of the mother not demanding immediate delivery, I delayed instrumental interference, and merely drew the head of the first child up against the pubis as much as possible out of the way.

Not much more than the average time was occupied by the second head in passing the perineum, and on its emergence I seized it and delivered the body attached thereto without much difficulty. The body of the first child was now easily delivered. Both children were still-born. The only injury to the mother was a slight laceration of the perineum, and she has made a good recovery.

In connection with this case I wish to refer to a suggestion made not long since by a writer in the *New York Medical Record*, viz, that the cases of remarkable resemblance between twins occur where they are attached to the same placenta. The rule did not hold good here, as, although both children were attached to the same placenta and enveloped in the same sac, the resemblance was not marked.

The child first presenting was a female, the other a male.

Yours, etc.,

J. H. CHURCHILL.

NOTE ON A SPECIMEN¹ OF A RECENTLY DELIVERED UTERUS
WITH ADHERENT PLACENTA.

BY

JAMES R. CHADWICK, M.D.,
BOSTON,

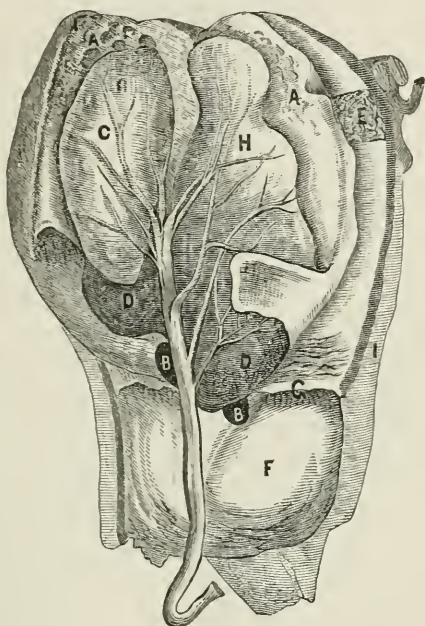
Fellow of American Gynecological Society.

THIS specimen was taken from a patient of Dr. A. L. Mason, of this city. During an attack of acute pleurisy labor set in, and the woman gave birth to a mature dead child within fifteen minutes. Her friends, however, did not summon Dr. M. until four hours later, when he found his patient dead and her clothing saturated with blood. I was invited to assist at the autopsy, and allowed to remove the whole genital organs unopened. We have here the vagina divided along the median line of its superior surface, and the uterus along the left border of its anterior wall, this latter being the only direction in which a sound passed freely to the fundus of the organ.

The uterus measures $8\frac{1}{2}$ inches in length, and is contracted quite closely about the placenta. The cervix is fully dilated, which renders it improbable that the expression of the placenta was hindered by a stricture at the cervix. The inner surface, where exposed, is covered with yellowish shreds of tissue; the underlying muscular fibres are not so distinctly visible as when the walls are cut, which tends to corroborate the views first enunciated by William Hunter, and so forcibly insisted upon by Matthews Duncan, that the internal surface of the uterus after delivery is everywhere covered with a thin stratum of the decidua. One point is quite remarkable, namely, the entire absence of any raised line on the internal surface, or thickening in the uterine wall, to mark the place of the internal os. This anatomical fact is in striking contrast with the plate from Braune's Atlas of frozen sections of women, representing a uterus before rupture of the membranes, but after dilatation of the ora. There the internal os appears as a distinct ridge four and a half inches by measurement above the exter-

¹ Presented to the Obstetrical Society of Boston.

nal os. Turning now to Dr. Tuck's specimen¹ of undelivered uterus at full term, we see the internal os in its normal position about one inch above the external os. The specimens therefore illustrate: 1st. The persistence of the internal os up to the full period of pregnancy. 2d. The enormous elongation of the cervix during the course of labors, so that the



- A. A. Extravasations of Blood between Membranes and Uterus.
- B. B. Uncovered Blood-clots.
- C. H. Lobes of Placenta.
- D. D. Blood-clot covered with Membranes.
- E. External layer of Chorion remaining adherent to Uterus.
- G. External Os.
- I. Site of Internal Os.
- F. Vagina.

internal os is several inches distant from the external. 3d. The complete obliteration of the internal os by the passage of the foetus.

The cervical mucous membrane, with its tracings of the ar-

¹ Presented to the Society the same evening.

bores vitæ, in my specimen show roughly the extent of the cervix. A peculiar bluish tinge of the inner layers of the muscular structure when divided, extending about two inches above the external os, corresponds probably to that part of the cervix which opposed the exit of the child, and consequently was subjected to much bruising, whence congestion resulted.

The *placenta* is double, the larger lobe being attached to the posterior wall, and the smaller to the anterior; their proximate borders are united throughout by a firm membrane. From the lower free end of the larger lobe is hanging a blood clot, so that the insertion of the umbilical cord appears to be marginal; but a closer inspection shows that the vessels really bifurcate before reaching the placental surface. We consequently have before us the very rare velamentous form of insertion. Such peculiarities are admirably portrayed by the plates in Hyrtl's book on the blood-vessels of the human placenta. On raising the lower part of the placenta by means of the cord, both lobes are found to be adherent to the uterine wall by nearly one-half of their surfaces. That these adhesions are quite firm is manifest from the amount of traction they bear without tearing. The trabeculate appearance at the junction of the uterus and placenta is produced by the orifices of the utero-placental sinuses. The outline of the placental site is scarcely indicated on the uterine surface, and there are hardly any patent vessels or protruding clots within its limits. These facts lead me to trace the fatal hemorrhage to the open sinuses on the free uterine surface of the placenta; the course of the blood would be, according to this view, from the uterus into the utero-placental sinuses at the points where the two organs were not separated, and out from the open ends of the sinuses wherever the placenta was detached.

All around the upper portion of the placenta the chorion is seen to be bound to the uterine wall by yellowish shreddy fibres, the remains of the decidua. These adhesions are in certain places firmer than the adhesions between the external and internal stratum of the chorion, so that the external one remains on the surface of the uterus. This is in accordance with William Hunter's descriptions. The persistence of the decidua up to the end of pregnancy has been recently demonstrated by Kundrat and Engelmann (*Stricker's Jahrbücher*, II.,

1873); remains of the chorionic villi can also be found in these tissues.

At several points near the border of the placenta are numerous isolated extravasations of blood between the uterine wall and the chorion; they vary in size from a minute point up to a walnut, the larger ones looking very much like hemorrhoids. To such effusions of blood some authors have attributed the spontaneous discharges of a serous fluid, which occasionally take place during pregnancy, and to which the name of "false waters" has been applied.

These extravasations of blood are of more interest as indicating one of the chief means whereby the chorion is detached from the uterus during or subsequent to labor. A careful examination of Dr. Tuck's undelivered uterus shows that the chorion is everywhere bound to the surface of the uterine cavity by shreds of yellow tissue, except within a radius of two inches above the internal os. It is probable that the chorion adherent to the lower zones of the uterus above this point is detached by the extrusion of the membranes through the ora during the first stage of labor. The remaining portions of the chorion that adhere to the upper part of the uterine cavity are then partially dissected off by innumerable extravasations of blood between the membrane and the uterus during contraction and relaxation of the uterine walls; these segments are then fully separated by the placenta in its descent.

The cause of the non-detachment of the placenta may have been atony of the uterus or pathological adhesion between the placenta and the uterine wall; the latter I had thought most probable, because the woman was several times heard to complain of the severity of the after-pains, but a microscopic examination of the specimen by Dr. Fitz, after it had been hardened, has failed to discover any evidence of pathological processes having taken place.

A CASE OF EXTIRPATION OF THE UTERUS, TOGETHER WITH ITS APPENDAGES, FOR A FIBROID TUMOR.

BY

E. H. TRENHOLME, M.D.,

Professor of Midwifery and Diseases of Women and Children, University of Bishop's College, Montreal; Fellow of the Obstetrical Society of London, England; Attending Physician to the Woman's Hospital, Montreal, etc.

(With one curve-table.)

Mrs. C., aged forty-two years, consulted me March 1st, 1876; widow, the mother of one child, twelve years old; is of Irish parentage, and by occupation a dressmaker. The patient suffered a good deal during her accouchement, the child presenting by the breech. About five years ago she aborted when four and a half months pregnant. Since the latter event she has been more or less under medical treatment, without benefit, for alleged displacement of the womb.

Present condition.—Is spare of flesh, dark complexion, lymphatic temperament, slight varicosis of the legs, but otherwise of a healthy appearance, notwithstanding a life of more or less continued inebriation. *Menstruation* is regular, but lately the flow is accompanied by clots of blood. *Micturition* for some years has been difficult, and lately at times quite impossible unless she “pushed up the womb.” *Defecation* is also becoming more and more difficult, and the fæces pass in flat, ribbon-like form. Is troubled with spasms in the bowels and flatus, also pains in the groins and down the legs, at times very severely indeed. During the last two months has had pains in knees and ankle-joints. Is troubled with bearing-down pains in the womb, constant nausea, and a choking sensation in the throat, as if a lump was there. Has pains in the breasts, as if pregnant. On examination per vaginam, find the whole cavity of the pelvis blocked up with an immovable uterine fibroid, which seems to be sub-peritoneal, and growing from the posterior wall of the organ.

Treatment.—Excision of the uterus, together with the fibroid, was determined upon as offering the most favorable course for the safety of the patient.

Operation, April 19th, 1876, reported by Mr. H. C. Fuller, student of Bishop's College.—“After the patient was completely anæsthetized by chloroform, she was kept under the influence of ether during the operation. Everything being in readiness at a quarter to twelve, the operator commenced by grasping and transfixing with the knife the integument and adipose tissue of the abdomen (which was very thick), between the umbilicus and symphysis pubis, dividing them upwards, making an incision about four inches in length along the median line. A few strokes of the knife exposed the linea alba, which he divided on a director, exposing the transversalis fascia and peritoneum, which were likewise divided on a director. The incision was then enlarged to within an inch of the umbilicus, and downwards to the symphysis pubis. A small vessel in the omentum was wounded; this was ligatured, the thread being cut off close to the knot. The omentum and intestines were then carefully pushed aside, exposing the tumor, which the operator attempted to enucleate, but upon an incision being made in it, the hemorrhage was so profuse that he desisted. The tumor, including the uterus, was then elevated from its situation in the pelvis, by pushing it upwards with the fingers of the right hand in the vagina. It was then grasped and raised by the left hand in the abdominal cavity. The walls of the abdomen were then depressed by the assistants, and the tumor was brought through the abdominal incision. It presented a round, smooth surface, having very much the appearance of the head of a child.

The fallopian tubes and ovaries were raised, and an opening made in the broad ligament near the uterus; a double ligature was applied beneath, and the broad and round ligaments were divided between them. The pedicle, composed of the neck of the uterus, was divided with an *écraseur* about one inch above the external os uteri. The wire of the *écraseur*, which was composed of a number of small wires twisted together, gave way during the tightening, when it was replaced by a single piano wire, which completely divided the pedicle, no hemorrhage occurring from the stump. I might here say that very little hemorrhage occurred during the operation.

The abdomen was completely cleansed, three ligatures were left (cut off short) in the abdominal cavity. The external

wound was closed by three deep and a sufficient number of superficial sutures.

The patient maintained a good circulation throughout the operation, suffered very little shock, and was removed from the table to the bed in good condition. The operation was finished at twenty minutes to one P.M. Size of tumor $4 \times 4\frac{1}{2} \times 5\frac{1}{2}$ inches, and in circumference $15\frac{1}{2}$ inches; weight two pounds."

After-treatment.—The operation lasted from 10.45 A.M. to 1 P.M. At 2 P.M. is conscious, very restless, and complains of great pain. 3 P.M.—The application of hot-water fomentations affords relief to pains. There is slight nausea and eructations. A sudden pallor of face supervened, after which was much easier and slept a short time quietly. 5 P.M.—Removed ten ounces normal urine. 10 P.M.—Slept well most of the two last hours; took part of a glass of milk.

April 20th, 3 A.M.—Slept most of the night, but is still troubled with eructations. Flatus begins to trouble the bowels; drew off urine.

10 A.M.—Removed urine, which was normal. Eructations continue; is restless. Took some broth, also brandy and water.

8 P.M.—Bowels very tympanitic. Vomited and passed flatus per rectum. Is much quieter and can lie on her side; urine high colored and scanty, five ounces.

10 P.M.—Sleeps quietly; passes flatus freely. Vomiting, etc., ceased. The pulse, however, is quick and shabby, which gives anxiety. Was ordered stimulants, but they induced vomiting and had to be discontinued.

April 21st, 2 A.M.—Seems better, but pulse is quick and urine scanty.

9 A.M.—Urine nine ounces, and healthier. Has rested a good deal. Looks better, but vomiting has again set in, and pulse is very quick and feeble. There is slight hemorrhagic flow per vaginam.

4 P.M.—Is doing badly. Pulse quick, etc. Breathing short and labored. Symptoms of collapse well marked. Resorted to brandy and water again, which seems to be well borne.

6 P.M.—Bowels moved naturally, but patient is rapidly sinking. Extremities are cold.

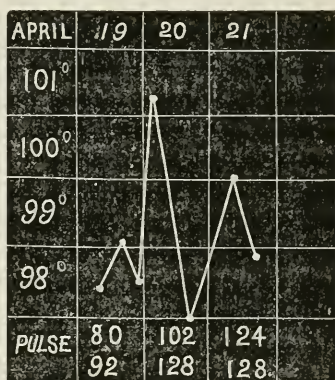
8.45 P.M.—Patient died—fifty-four hours after the operation.

Post-mortem, three hours after death.—There is a quantity of

bloody serum in the cavity of the pelvis. Colon is distended with air. Cavity of abdomen and other viscera normal. No cause for death is apparent.

The following curve indicates the temperature and pulse after the operation :

Remarks.—The unfavorable issue of the case would induce me to endeavor, in another similar case, to carry the uterus and tumor above the brim of the pelvis while the patient was under chloroform. If such a procedure were impracticable, and excision of the uterus unavoidable, I should avoid the écraseur, as it was probably the cause of this patient's death by shock.



A drainage-tube through the os would have been useful, although the quantity of fluid effused was not very great nor very important as a factor in causing death.

32 BEAVER HALL, MONTREAL, Dec. 1876.

CASE OF SYMPATHETIC HYSTERO-NEUROSIS OF THE STOMACH.

BY

F. FORMENTO, M.D.,

New York.

MR. EDITOR :—Allow me to communicate to you the particulars of a case which, I hope, may not be found entirely uninteresting to your numerous readers. As far as I know, very few, if any, cases of a similar nature have been reported. My main object in publishing the following, is to invite discussion and obtain further information on the subject.

It is, *en résumé*, a case of intractable vomiting and hysterical

convulsions, lasting for several years, caused by a peculiar condition of the os uteri, and finally cured by incision and dilatation of that organ. It may be considered as a new illustration of reflex action on the digestive and nervous systems from local irritation of the genital organs.

Mrs. Amelia P., of good constitution, and apparently healthy, was married at the age of twenty-one. Previous to marriage menstruation was regular, but somewhat painful. With this exception, apparently so insignificant, she was in excellent health. During the first weeks following her marriage there was nothing specially to be mentioned. Menstruation not showing itself as usual, Mrs. P. was supposed to be *enceinte*, this supposition being corroborated by the existence of such symptoms as occasional vomiting, irritable disposition, capricious appetite, etc.

But menstruation took place two or three months after marriage, and rather dispelled all suspicion of pregnancy. There was about the same amount of pain during her periods as before marriage. Vomiting continued, and soon became more frequent and more constant; there was scarcely a day without it, and it often repeated itself several times during the twenty-four hours. At first the patient would only vomit in the morning, when the stomach was empty, but in a short time this distressing symptom showed itself at irregular hours, after as well as before a meal. The slightest cause, physical or mental, would sometimes provoke it, such as a disagreeable odor, the sight of an unpleasant object, a slight moral impression. There was no great uneasiness during vomiting, no tenderness or pain in the epigastric region, and a complete absence of other symptoms indicating any organic disease of the alimentary apparatus. As a consequence of this continued vomiting, nutrition soon became greatly impaired; the patient lost flesh; there was extreme prostration, with anæmia, excessive nervous irritability, perversion of moral and intellectual faculties—in brief, all the results of a prolonged anæmic condition in a nervous and irritable subject were noticeable.

After a few months these disorders of innervation went so far as to produce convulsions, with complete loss of consciousness, general and at times partial anæsthesia, or, during certain attacks, extreme hyperæsthesia, such as to cause the patient to

bounce and throw herself away under the slightest touch, as she would have done under the shock of an electric current. On many occasions I noticed the above described phenomena, as well as the following: A tetanic rigidity of the muscles of the trunk, neck, and extremities, which could not be readily overcome; at times there were phenomena of catalepsy—the rigidly contracted muscles would retain for hours the same position, at other times the body would rotate for hours, from one end of the bed to the other; at times again trismus would be noticed, opisthotonos, contraction of pharynx and œsophagus.

These occurrences would often take place several times during the month; still, menstruation would continue regular, not more difficult, not less copious than habitually.

At the time I was first called to visit Mrs. P. she had consulted several physicians, and had been treated in various ways. Anti-spasmodic tonics, hydropathy, electricity, sea-baths, mineral waters, blisters, hypodermics of morphine, etc., had all been tried in vain. Absolute continence for months had been recommended, and faithfully observed, without any change in her condition. Under the influence of these different modes of treatment, there would at times be observed an apparent amelioration of the gastric and nervous symptoms, after which, for weeks and weeks, the patient would suffer as before, and present the varied strange phenomena above described, which were not always increased at the menstrual period. The attention of her different medical advisers had not been called to the organs of generation; there was, in fact, no leucorrhœa, no hemorrhage, no pain, and menstruation continued regular.

Guided by the experience of the past, and taking into consideration the failure of the varied medication followed up to that time, I was easily led to believe that the cause, whatever it may have been, of all her sufferings existed in the uterus and its annexed organs. I was still more inclined towards that opinion by the fact of the existing dysmenorrhœa and sterility—particularly noticeable in this case, as all of this patient's sisters had large families of children.

Insisting, in consequence, upon the necessity of a thorough uterine examination, I found an abnormal sensibility of the external organs, amounting almost to vaginismus; a narrow,

constricted, vaginal canal; a conical cervix, hard, resistant to the touch, almost fibrous, of a deep red color and smooth surface; external os so small as to be almost invisible, and not allowing the smallest sound to penetrate. Uterus of normal size and in position.

Believing this special condition of induration and conicity of cervix, and the extreme narrowness of its canal, to be the probable cause of all the above described symptoms of gastric and nervous disorders, considering that the existing dysmenorrhœa and sterility required and justified for themselves surgical interference, I proposed to incise and dilate the cervix. The operation was readily accepted. I then performed the operation of lateral incision of the cervical canal in its whole length, particularly of its two orifices, following strictly the *modus operandi* and recommendations of Dr. Marion Sims during the operation as well as during the dressings and after-treatment.

The immediate results of the operation were most satisfactory. Before the incisions healed the vomiting had ceased, the appearance of the parts became more natural; the form and shape of the cervix was entirely modified; the induration and fibrous appearance of the neck, the state of congestion and the orgasm of the genital organs disappeared, and the cervical canal admitted easily the introduction of a large sound to the uterine cavity, which was found of normal depth and direction.

As the vomiting subsided nutrition improved, strength returned, and the nervous system became quieted—*sanguis moderator nervosum*. The patient became fleshy, gay, and cheerful, and such a change from her condition previous to the operation was a cause of great surprise and delight to herself, relatives, and friends, not less than to myself and my confrères who saw her at the time and followed the case with me.

For nine or ten months following the operation the condition of Mrs. P. was most satisfactory. She was in the best of health. Menstruation was regular, painless. Unfortunately she did not become *enceinte*.

About that time, functional derangements of the stomach and of the nervous system began to show themselves. The

uterus was examined, and the os and cervical canal found to have become considerably more narrow than they were two months after the operation.

The os was carefully incised for the second time; sponges and dilators were used once or twice a month for some months after the operation.

The same immediate and remarkable amelioration in the patient's condition followed and continued for over a year. And then again, for the third and fourth time, after a period of time that varied from ten to sixteen months, the return, to a less degree, of the same disorders in functions of the digestive and nervous system, compelled me to have recourse to the same method of treatment. Invariably, after a few months, the os uteri would return to its abnormal condition of induration and partial occlusion.

When I last saw her Mrs. P. was well and apparently healthy. She had lost her husband within a few months.

Will she ever recover permanently?

Will there be no return, as in the past, of the distressing symptoms, that repeated incisions and dilatations of the os uteri have been the only means so far of relieving for a more or less protracted period of time?

CASE OF TRANSVERSE SEPTUM OF THE VAGINA OBSTRUCTING DELIVERY.

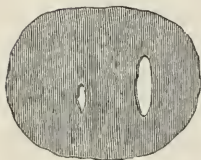
BY

JOHN S. COLEMAN, M.D.,
Augusta, Ga.

(With one woodcut.)

Mrs. —, primipara, was taken in labor in the afternoon. Owing to the absence of Prof. Jos. A. Eve, who had been engaged to attend her, I was summoned. On attempting to make a vaginal examination I was surprised to find an obstruc-

tion about two inches from the vulva. My first impression was that my finger was in contact with the anterior lip of the uterus, and that the os was high up in the hollow of the sacrum. A more careful examination admonished me that I had to deal with a complete *transverse* septum vaginae, with two small openings, one upon either side of the median line. That upon the right was barely large enough to admit the tip of my finger, while the left would admit of its introduction as far as the second joint, and through the latter I could discern the patulous os.



Character and form of the septum as presented to the touch. (Diagrammatic.)

I now forced my finger through the smaller opening, and, flexing, brought its tip through the left and larger one, which enabled me to draw down to the vulva the intervening band. This, while tense upon the finger, I judged to be half an inch wide, and about one-eighth of an inch thick. This abnormal condition of the parts perplexed me no little for a time. At this juncture the arrival of Prof. Eve was announced. He, after a careful examination, verified my diagnosis. With his concurrence (after the application of a double ligature to guard against possible hemorrhage), I divided with a pair of strong scissors the obstructing band. It was now determined to leave, for a time, at least, the case to the "vis medicatrix." After the lapse of six hours, with the first stage of labor complete, and the uterus in a state of inertia, Prof. Eve applied the forceps, and delivered the patient of a still-born child. Her recovery was speedy and uninterrupted. In a conversation with her husband he informed me that the hymen occupied its usual site, and that it resisted the sexual act for two or three weeks. That the septum was congenital, and not cicatricial, is proven by the absence of stenosis. The vagina was of normal calibre from vulva to septum, and permitted the partial penetration of the male organ. Its attachment to the entire circumference of the vagina, its elasticity, the facility with which the intervening band could be drawn to the vulva, a distance of two inches, preclude the idea of its inflammatory origin. As to the fact of conception under such apparently adverse circumstances, Playfair, in his *Midwifery*, p. 83, says: "It must therefore be ad-

mitted that they (the spermatozoa) ascend chiefly through their own powers of motion. They certainly have this property to a remarkable extent, for there are numerous cases on record in which impregnation has occurred without penetration, and even when the hymen is quite entire, in which the semen has simply been deposited on the exterior of the vulva, and in such cases, which are far from uncommon, the spermatozoa must have found their way through the whole length of the vagina."

Leishman, in speaking of "labor obstructed by the maternal soft parts," says: "*The smallest possible vaginal orifice is all that is essential to impregnation.*"¹ But few obstetric authors mention transverse septa as a cause of obstruction in labor. The only strictly analogous case to my own that I have thus far been enabled to discover is that related by Cazeaux. I shall not offer an apology for quoting freely from him, because of the rarity of the malformation. In the fourth American edition of his work, p. 591, he says: "The partitions spoken of as existing in the vagina may be *transverse* or longitudinal; and most of the cases of double or triple hymen mentioned by authors can probably be referred to the former. These may be complete, that is, they may divide this canal into two distinct cavities, though more frequently they exhibit a small opening, through which the liquids ooze." The case above alluded to is as follows: "In the course of the year 1837, a young woman, who was advanced to the last month of gestation, presented herself at the clinic of the Faculté.

"When the vaginal touch was resorted to, the finger was arrested at the depth of one and a half or two inches, by a perfectly smooth septum, in which it could detect no sensible opening. By a resort to the speculum, it became evident that the obstacle to the entrance of the finger consisted of a membrane which adhered to the walls of the vagina and completely blocked up its cavity at this point. Its surface appeared to be nearly an inch in diameter, and by pushing and distending it with the extremity of the instrument a small opening was detected toward the upper third and right portion of this partition, through which a few drops of a sero-purulent fluid were oozing. The extremity of a blunt probe could scarcely be made to pene-

¹ Italics are mine.

trate the little orifice, which was directed obliquely from below upwards, and from before backwards; the instrument then entered a kind of posterior chamber formed by the upper wall of the vagina."

The malformation in my patient was probably inherited, as she says that she has been told that two of her aunts had suffered from some obstruction to the birth of their children.

RETROVERSION AND IMPACTION OF THE GRAVID UTERUS,
COMPLICATED WITH CANCER, THE PREGNANCY
CONTINUING TO TERM.

BY

GEO. B. FUNDENBERG, M.D.,
Cumberland, Md.

I wish to premise the report of this case with the remark that, if I regarded my own reputation more than the interests of medicine, I would be quite willing to let it sink into oblivion. But as I believe it to be a case nearly unique in the annals of gynæcology, and one, which recorded may prevent others as unskilful as myself from committing a similar mistake in diagnosis, I feel compelled to place it on record.

On the 20th of January, 1876, I was called to see Mrs. —, a widow, aged 35, the mother of three children, the youngest three years old. She has had no abortions, and has enjoyed good health until after the birth of her last child, from which event she dates the beginning of her ill health. She has felt ever since a weight and bearing-down in the pelvis. On the first day of August, 1875, her menses, regular and normal before, ceased, and on the 15th October she was compelled to quit her employment as chambermaid in a hotel, on account of severe bearing-down pains, accompanied with discharges of blood per vaginam. These symptoms increased until January 1, 1876, when she took to her bed. A physician was called at this time, but made only a cursory external examination. I saw her first, as above stated, on January 20th. She was then confined to bed,

was quite anæmic and much emaciated, and was suffering with severe and continued sacro-lumbar pains, with dysuria and constipation. She stated that in November she had a copious vaginal hemorrhage, and a second one in December, both accompanied with severe bearing-down pains. A digital examination revealed a hard, nodulated, not very sensitive, and irregular tumor, about two and a half inches in diameter, very low down in the vagina, the os uteri with indurated hypertrophic lips being jammed tightly against the pubis, the anterior lip above the bone and beyond the reach of the finger. The posterior wall of the vagina was infiltrated and nodular, the tumor occupying the vagina quite immovable. The uterus was evidently retroverted. The abdominal examination afforded only negative results. There was no tumor above the pubis, no distention of the abdomen, its walls being soft and flaccid. The diagnosis was scirrhus cancer of the uterus, with retroversion and impaction, and with implication of the vaginal walls in the cancerous infiltration, of which character, I had no doubt, were the vaginal tumor and nodules.

I saw her several times during the ensuing eight weeks, in which time she had several hemorrhages, with great increase of suffering, rendering it necessary to give relief by opiates.

On the 6th of April a careful vaginal and rectal examination showed that the tumor in the vagina had increased in size very rapidly, measuring now at least three and a half by four inches in diameter, the cavity of the vagina being almost obliterated by its downward extension. A separate tumor as large as a walnut had now also developed in the recto-vaginal septum, close to the sphincter ani. The anterior vaginal wall showed several nodular projections, and numerous ridges and irregularities had developed over the surface of the main tumor. The abdomen now began to exhibit some hardening above the pubis, which subsequently extended half way to the umbilicus, but never any higher. This induration in the hypogastric and iliac regions we attributed to the upward extension of the cancerous infiltration. The abdomen above the boundary of the hypogastric tumor presented no signs of hardness, but was soft and flaccid. The patient was now very much emaciated, and the pains were so severe that large doses of opiates were unavoidable. She had considerable vaginal discharge, without

odor, and presented no signs of cancerous blood contamination. Constipation was excessive, the tumor quite occluding the rectum, and she urinated with increasing difficulty. The patient was seen at this stage by three other physicians, who, after careful explorations of the abdomen, vagina, and rectum, concurred in the diagnosis.

On the 20th of May, not having seen the patient for a week, I was called to see her, when her mother invited me into an adjoining room, and exhibited a full-grown still-born child, to which the patient had given birth during the night! It was neither putrid nor macerated, was of average size and weight, with a well-developed and properly shaped head. I found the placenta protruding from the vulva and removed it with considerable difficulty. It was solid, thick, and rolled together like a sheet of paper, a shape which it retained after its removal. It presented the appearance of having been subjected to continuous pressure during its growth, giving it a character and density totally different from the normal succulent placenta. The patient stated that she had felt the mass protruding for six or eight hours after the birth of the child.

On the day after this, the patient, although relieved of pain, had considerable fever. I removed by the catheter three pints of turbid, fetid urine. The vagina and urethra were exquisitely sensitive. During the following eight days I was compelled to use the catheter, the urine being muco-purulent and fetid; washed out the bladder daily with a solution of carbolic acid. In ten days after the birth of the child the patient began to improve. The febrile irritation subsided and her appetite improved. The supra-pubic tumor is lessening, but she now complains of a tumor in the rectum, giving her great uneasiness and a constant bearing-down sensation. An examination shows nodular induration, both in the recto-vaginal and vesico-vaginal septa.

June 4th.—The patient is emaciated to an extreme degree. The urine has regained its normal character. The supra-pubic tumor has nearly disappeared. She has no control over the sphincter ani, but can retain her urine.

June 28th.—Found the patient out of bed. Can walk with the aid of crutches. Legs and feet œdematous, and strength apparently improving. All trace of cystitis has disappeared.

Complains of a constant pain in the left hip. Has no control of the bowels, but has appetite and sleeps well without opiates. A digital examination shows an increased size in the recto-vaginal and vesico-vaginal indurations, and as far as the touch can reach a mass of nodular tumors are presented, which by their arrangement confuse all diagnosis as to the position and condition of the os uteri. An ocular examination without the speculum discloses a number of vaginal tumors transmitting a yellow color through a normal mucous membrane.

July 10th.—The patient has now a very offensive watery discharge. The cancerous contamination shows itself strongly in the straw-colored complexion and the facies cachectica. She has passed a piece of sloughed tissue three inches long and one and a half inches broad.

Aug. 4th.—Edema of face and hands. Pulse and strength failing; complains principally of left hip.

Aug. 12th.—Died to-day. Hemorrhage during the last hours of life.

Post-mortem, eight hours after death.—Emaciation extreme. Skin bright straw-color. The body of the uterus, the ovaries, tubes, and broad ligaments untouched, but the cervix, the os, the vagina, and the recto-vaginal and vesico-vaginal septa infiltrated and ulcerated. The inner coat of the bladder injected, and at the internal orifice of the urethra granular masses were beginning to form. Yellow-colored nodules were projecting on the inner surface of the bladder, but no perforation had occurred. The infiltration into the vaginal walls had so elongated that canal, that the uterus could not be reached by the touch. The infiltration extended to the labia minora, and there was erosion of the labia majora. The pelvis was unfortunately not measured, but was obviously of unusual capacity. The pubic arch was broad and prominent, the sacrum deep and long, and all the diameters above the average length.

This remarkable case affords a text for several observations. It is quite probable that the cancer existed before conception, and favored its occurrence, for it is well known that incipient malignant disease of the womb increases the desire for sexual gratification. That abortion did not occur at the third or fourth month, the usual periods in cases of retroversion with impaction, may be attributed to the cancerous infiltration of

the os and cervix, which prevented their dilatation. Repeated efforts, as shown by the hemorrhage and bearing-down pains occurring at various stages of pregnancy, were made by the womb to throw off its burden, but such was the induration and inelasticity of the cervix, that it was not until the full term was completed and the womb distended to its final capacity that this became possible, and it was then probably facilitated by laceration of the friable tissue of the cervix.

That the pregnancy was not discovered by myself or any of the three other physicians who examined the case may appear to those whose large opportunities afford ample material for the exercise of diagnostic skill, as a remarkable instance of deficiency in observation, but we console ourselves by the remembrance of even grosser errors by much more distinguished observers. The mistakes made in this department by Boivin, Dubois, Bécлар, Doeveren, Dupuytren, Capuron, Lisfranc, Maygrier, and Londe, only show that no eminence or skill will lead to infallibility, and that even in the present advanced state of gynæcological knowledge the era of absolute perfection in diagnosis is yet far distant.

And, as regards the case above reported, it must be remembered that it was disguised by a disease which, by its extensive structural changes, destroyed the normal relations of the parts in a remarkable manner. If no such complication had existed, doubtless the pregnancy would have been discovered. From our errors we learn most of all.

A CASE ILLUSTRATING "THE INFLUENCE ON THE INFANT
OF MEDICINES, PARTICULARLY NARCOTICS, ADMINIS-
TERED TO THE MOTHER DURING PREGNANCY
AND LABOR."

BY

J. J. LAMADRID, M.D.,
Brooklyn, N. Y.

APPROPOS to the discussion which lately took place in several of the meetings of the N. Y. Obst. Soc., and was wholly chron-

icled in the last number of this journal, I thought it proper to report the following case, which has just come under my own observation.

I fully agree with and endorse Dr. Mundé's remarks, when he says: "In view of the difficulty attending experimental investigations in this as in other kindred topics, the publication of individual professional experiences is the most ready way of furthering the inquiry, as well as the careful observation of and recording in all future cases of the effects on the foetus of any drug given to the mother during pregnancy and labor." This case, then, I think, will go to strengthen the belief, and increase the number of clinical cases already reported by Drs. Gillette, Thomas, and others.

On the 18th of April, 1877, I was sent for in a hurry to see Mrs. K., aged 25, whom I found in labor pains. The history of her case is as follows: About two weeks previously she had a severe attack of facial neuralgia, for which she applied to a neighboring physician for immediate relief. In doing so, she informed him, also, that she was in her seventh month of pregnancy, and wished him not to give her anything that would injure the child, as she looked upon her future confinement with great delight and hope—this being her first pregnancy since her marriage four years ago.

On careful examination I could not detect the sounds of the foetal heart or the placental bruit. On the other hand, I was positively assured, both by the lady herself and her husband, that the foetal movements had ceased altogether since the second day after taking her neuralgic medicine. Since then she had worried and suspected that something must be wrong, for she noticed also, soon after, that her breasts began to grow smaller and flaccid. Having made an examination of these parts too—which I found as above related—I became convinced that the child was dead, and gave my opinion accordingly.

Labor having progressed favorably, she was delivered three hours afterward of a still-born infant, which by its looks fully corroborated the suspicion and fears of the much-disappointed mother; in other words, the child looked as though it had been dead for some time, as shown by its discolored appearance, and the peeling off of the skin, but no odor.

In looking over the above case, it will be noticed that life ceased soon after the mother took the medicine. Previous to that, she is sure, the child was alive and hearty. From that time she feared that something might have happened, as she did not feel from that day the foetal movements, with which she had already become familiar, besides the changes which had taken place in her mammary glands. All of this goes to show that the mother herself was aware or feared that the medicine had done some mischief.

Knowing well that there were several other causes which might have produced the death of the foetus, I decided at once to make a most thorough investigation, for the purpose of finding out, if possible, the real and true cause in this case. This included the probability of syphilis in either of the parents—who, by the way, are highly respectable people, and in whose testimony I place great confidence. I of course explained to them my reasons for doing so, and the importance of their being candid and sincere with me. Having, therefore, received satisfactory evidence, and failing to find the least trace or signs of that disease in either one, I soon discarded this supposition. At the same time, the placenta was also carefully examined, but I could not detect any fatty degeneration or diseased condition of that organ. On further inquiry, I was positively assured by the lady that she had not met with any accident, or been frightened or excited at the time the death of the fetus probably occurred. As regards the child, its size and form were normal.

As to the intense neuralgia—physical suffering—of the mother (another possible cause of intrauterine death), I may state that this was the first time she ever suffered with it, and as she always has been strong and healthy up to the present time, it may safely be presumed that the latter had nothing to do with the accident.

In view of a complete failure to discover any other cause that could have produced the death of the child, I could not but arrive at the natural conclusion that the morphine killed it. Perhaps, at any other time, this case would have been unnoticed by me, but as the subject is still fresh in our minds, and I, like the rest, have been much impressed with it, I made up my mind hereafter to investigate it more thoroughly,

and as a result of my own observations the record of this case is here given.

Having obtained a copy of the prescription, I found that it consisted of one grain of sulphate of morphia to an ounce of symple syrup—of this she was directed to take a teaspoonful every hour till she was free from pain, or sleep was produced—or one-eighth of a grain in each dose, perhaps more, according to the size of the spoon. She told me she took three doses of this before she went to sleep, and the rest was taken next day. Following this she got another prescription (the same day), containing the same quantity of morphine and hyd. of chloral together, as the former had failed to relieve her permanently.

In conclusion, there is no doubt to my mind that if a child, alive and hearty at the seventh month of its intrauterine existence just before the mother takes a few doses of morphine, ceases to move soon after, and is born dead two weeks later, and no other cause is found, the inference is natural that the drug killed it. This, then, is another case directly traced, I think, where morphine given to a pregnant woman has proved fatal to the foetus in utero. This case will also naturally suggest to the mind of the practitioner the question, whether other cases of still-born infants, when the cause of death is unknown, may not be attributed to narcotics administered during pregnancy?

As the subject is fresh in our minds, and as physicians in general have given little thought and observation to it heretofore, I think it proper that in the future we all should investigate it more carefully and thoroughly, and each one give a record of his own experience, until this important question is satisfactorily settled.

DISAPPEARANCE OF A UTERINE FIBROID UNDER THE USE
OF ERGOT.

BY

JEROME A. ANDERSON, M.D.,
Hills Ferry, Cal.

Mrs. M., æt. 29. Mother of three children, all at full term. Found her with blanched lips, rapid pulse, dizzy and fainting from excessive loss of blood. Had been bleeding more or less profusely for two weeks. An examination revealed a patulous os, from which the blood was slowly oozing. At the internal os the finger met a rounded protuberance, which was diagnosed as a foetus, just ready to be extruded. As the unpleasant symptoms from loss of blood were very urgent, I contented myself by placing an alum plug against the external os, and administered ergot and stimulants, remaining until the patient rallied a little and weak uterine pains had set in.

The next day there had been no further recurrence of the hemorrhage, and the pains were quite pronounced. For three succeeding days the pains became harder and stronger, without extruding the foetus, and as there were evidences of beginning decomposition, I determined to remove it. On passing the finger into the cavity of the uterus, I was surprised to find the supposed foetus a sub-mucous fibroid, about the size of a goose egg, semi-ovoid in shape, and with its rounded extremity presenting at the internal os. It was attached to the right latero-anterior portion of the uterus. Opposite, and considerably softened, I found what proved to be a foetus, of about six weeks. I cautiously broke this down, and succeeded in removing the greater portion. The remainder was discharged in the lochia without any unpleasant symptoms.

The fibroid had a broad base of attachment, being flattened against, or rather with one-half buried in the uterine walls. It was smooth, evenly rounded, and firm—in short, a typical submucous fibroid.

To prevent as much as possible a further recurrence of hemorrhage from its presence, I gave ergot in regular inter-

vals and in sufficient quantity to keep up a tonic contraction of the uterus. The condition of the patient rapidly improved, until in a short time she was able to be about. She was extremely anxious for an operation for the removal of the tumor, which I agreed to as soon as her strength would warrant it. Her next menstrual period passed without any alarming symptoms, and I determined to operate in the succeeding interim. I dilated the womb well with sea-tangle tents in order to make a thorough examination before deciding upon any particular operation. To my surprise, I found the tumor much reduced in size—fully one-third—and its extremity withdrawn from contact with the internal os. It seemed not so firm or resisting in its texture also. I of course advised delay, still keeping up the ergot freely, and watching in vain for any toxic effects of the drug.

At the end of three months, I made another exploration by means of the tents, and could detect no sign of a tumor, except a thickening of the uterine walls where it had been attached, which was quite apparent upon careful bimanual examination.

At present the patient suffers from retroversion—not so great, however, as before the disappearance of the tumor—together with a cervical endometritis, which is rendered more troublesome by the presence of small mucous tumors—ovulii Nabothii. There is also menorrhagia to some extent. But her condition is so much improved, and she resides at such a costly distance from medical aid, that she declines any further treatment at present.

I attribute the disappearance of this tumor solely to a degeneration (fatty?) caused by pressure of the uterine walls under the influence of the ergot; and I believe that this class of tumors, taken at the stage this one had reached, viz., beginning mechanical interference with the internal os, may often be removed in the above manner. Either that, or we may reasonably hope that they will become polypoidal under the pressure caused by the ergot. This end I had in view when I primarily resorted to its use, together, of course, with the controlling of the hemorrhage.

Two minor points of interest are to be noticed: retroversion with a small tumor in the anterior portion, and pregnancy occurring under such unfavorable conditions.

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Reported by W. H. H. GITHENS, M.D., Secretary.

Stated Meeting, March 1, 1877.

DR. JOHN H. PACKARD, *President, in the Chair.*

PLACENTA PRÆVIA.

DR. JOS. V. KELLY read the histories of three cases of placenta prævia.

CASE 1.—Adherent placenta. On the 5th of March, 1874, I was called to see Mrs. M., who had then completed the seventh month of her first pregnancy. I was informed that on the previous night the patient was aroused from sleep by a moderate vaginal hemorrhage. The bleeding had ceased before my visit, and the patient was up and sitting in a chair. No vaginal examination was made at this time. The possibility of the hemorrhage being due to an abnormal insertion of the placenta was stated to her friends. She was directed to keep quiet, and aromatic sulphuric acid gts. v. every three hours was directed. No untoward event occurred until April 2d, when the bleeding recurred, the discharge being moderate. I made a vaginal examination and found the os sufficiently patulous to admit the index finger, which came directly in contact with the placenta; the foetus presented by the vertex. I could not reach the edge of the placenta, though it seemed to thin off posteriorly.

I inserted a tampon, and again the acid was given and absolute rest in bed enjoined; the tampon was removed within twenty-four hours. There was some slight bleeding until April 8th, when she commenced to show signs of constitutional distress in a rapid pulse and some fever. On the afternoon of April 8th I was called in great haste to see her, and on reaching her bedside at 5.30 P.M. found that she had suffered from a frightful hemorrhage, the bedding being deluged with blood, and the patient complaining of great weakness. Pulse 128; skin cool. Shortly after my arrival I was joined by Dr. J. Knight Uhler, who had been summoned in my absence, and who assisted me in the subsequent management of the case. A

vaginal examination showed that half of the head had passed the superior strait, and the os dilated to the size of a half-dollar.

The tampon was again inserted and fluid ext. ergot given hourly to arouse the uterus before turning. In the course of two or three hours feeble pains were complained of, and the patient was etherized and brought to the edge of the bed, in order to perform version. On introducing my hand I found the os three-fourths dilated, and the posterior half of the vertex uncovered by the placenta, the membranes having ruptured. I found sufficient space to apply the forceps, and this I did (applying the instruments with reference to the sides of the pelvis), extracting in the usual manner. The uterus contracted well, and there was no further hemorrhage. The child was still. On attempting to remove the placenta it was found to be adherent by the anterior fourth of its surface, and this adhesion explained how, as the uterus dilated, the vertex became free from placental covering posteriorly, and thus allowed the application of the forceps, a procedure certainly less difficult than turning with ruptured membranes and a head which had partially passed the superior strait.

The placenta was freed from its attachment and delivered. At this juncture the condition of the patient was quite alarming; pulse 140; pinched expression of countenance, and whispering voice. She was freely stimulated, and perfect rest secured.

She was placed upon a diet of milk, beef essence, and brandy, and twelve grains of quinine given daily. At the end of a week, as her pulse had been reduced in frequency, the amount of quinia was decreased, and the diet made more ordinary in character. At the end of three weeks she sat up in her bedroom, and three weeks later visited my office, expressing herself as feeling quite well, though she still bore, in her anæmic countenance, the impress of the dreadful ordeal through which she had passed.

CASE II.—On October 5, 1873, I was called to see Mrs. Mc. Found her in bed and learned that a few hours previously, while dressing, she found herself losing blood from the vagina. The blood came in a gush, and she was so weak that she had to be assisted to her bedroom. When I got there she was still bleeding freely, and I applied a tampon, having satisfied myself by a digital examination that the placenta was presenting.

I should state that this patient was in the ninth month of pregnancy, and that she had previously borne children. The tampon was allowed to remain forty-eight hours, slight hemor-

rhage continuing. Its removal was followed by the expulsion of several clots. There was some dribbling of blood for the next six days, during which time the aromatic sulphuric acid was given in appropriate doses, absolute rest in bed being also secured. During this week there was some uterine pain at irregular intervals, but on the night of the 12th, seven days from the beginning of the bleeding, labor set in. As the pains became more decided the bleeding became more marked, so much so as to require the vagina to be again tamponed. The tampon was removed from time to time to note the amount of dilatation of the os, and at 2.30 A.M. on the 13th, the dilatation being one-third full size, $\frac{f}{3}$ ss. of wine ergot was given and the patient etherized by Dr. W. C. Todd. She was then brought to the edge of the bed and I performed version without any great difficulty, the anæsthetic effectually preventing any struggles on the part of the patient. The soft parts were quite pliable; the uterus contracted promptly, and there was no further hemorrhage; the placenta was expelled by external compression aided by slight traction on the cord.

The patient was quite debilitated for a week, though she was able to be up a little while on the twelfth day and left her room at the end of the third week, having had no bad symptoms, except such as might be chargeable to the loss of blood. The foetus was born alive and in good condition.

CASE III.—I was summoned to see Mrs. C., on the 21st of August, 1874. Found her in the seventh month of her second pregnancy.

I had attended her in her first labor, which was normal; the baby died of trismus on the tenth day. I learned that on the previous night she was awakened by a discharge of blood from the vagina, which had ceased before my visit. She was ordered the aromatic sulphuric acid, and no examination was made, though the idea of the possibility of placenta prævia was entertained. The next day the acid was omitted, as no further bleeding had occurred. I did not see the patient again until October 18th, when I was summoned, and found that a fresh hemorrhage had taken place. I examined per vaginam and found that the os admitted two fingers and was blocked with placental tissue. The presentation of the foetus was not determined. There was some loss of blood until next day, when the discharge ceased. On this day there were a few feeble pains. On October 20th I was urgently called, and found the membranes ruptured and the pains much stronger. Examination showed the os dilated to the size of a silver half-dollar, the vertex presenting and the umbilical cord prolapsed. The pulsations of the cord were slow and feeble, and I determined on

immediate delivery. The os was to a certain extent dilatable, as was also the vagina. I had provided ether, expecting to use it when labor set in; but the feeble pulsations of the cord admonished me that long before I could obtain assistance to administer the anæsthetic, the child would be dead. I found a fringe of the placenta occupying one-third of the circumference of the os, on the left side. I applied the forceps, passing the male-blade between the placenta and the fetal head. The delivery was one of great difficulty on account of the imperfect dilatation of the soft tissues, and I regretted very much the absence of anæsthesia.

The child was covered with clotted blood, and although the uterus was compressed, an alarming amount of blood was lost before the placenta could be delivered. The condition of the mother caused me great anxiety, her pulse 90, and feeble, running up in a few hours to 140 per minute. Brandy and ammonia were given as well as beef-essence.

The next day she complained of pain and tenderness of the pelvic region; a violent attack of metro-peritonitis was developed, and for three weeks her life was in great peril. All the symptoms of pelvic inflammation, however, passed away, and I ceased my attendance at the end of the fifth week, the patient merely complaining of slight pain in the right side, on exertion, though there were no evidences of induration discovered, either by vaginal or external examination.

The child lived twelve hours.

DR. WM. GOODELL congratulated Dr. Kelly on the success of his treatment. He preferred Barnes' dilator to any other form of tampon, because, while acting as a plug, it was also performing a duty in dilating the os-uteri. The tampons of muslin or of sponge, if packed tightly around the cervix, must in a measure interfere with the process of dilatation. Dr. Davis, of Wilkes-barre, in a very able paper, before the State Medical Society, had suggested that, as placenta prævia centralis is very rare, the narrow side of the placenta should be separated from its attachments to the uterus by means of the fingers, and the membranes immediately ruptured. The head will then come down, and by its pressure on the placenta prevent further hemorrhage; while at the same time it will hasten the process of dilatation. But every case must make its own rules. Sometimes great rigidity of the os and cervix complicates matters, and then Barnes' dilator and the internal use of opium must be tried. Other circumstances may require ergot, version, or the use of the forceps. He considered Monsel's solution very objectionable, as it caused clots to form in the reticulated surface of the uterus recently denuded of the placenta.

These clots remained and were slowly disintegrated, and the poisonous detritus trickled over the largely vascular and absorbent surface of the cervix, and thus added the dangers of septicæmia, as in one of the cases recited by Dr. Kelly. If a hæmostatic were needed he would prefer very hot water, and that failing, the tincture of iodine, largely diluted. It is a true hæmostatic, checking the hemorrhage without giving rise to clots.

DR. EDWARD L. DUER preferred his own method of tamponing. He used a glass speculum and introduced cotton wadding in pieces of convenient size and packed them tightly, withdrawing the speculum as the vagina became filled; he avoided all use of oil during this process. Astringent injections may be used without removing the cotton, as the latter will absorb them and pass them to the os by capillary action. When it became desirable to remove the tampon, the injection of an ounce of oil rendered the process an easy one.

DR. GOODELL stated that if he had hemorrhage from an incised os, he would prefer Dr. Duer's plan, using, however, a Sims' speculum. But in the class of cases under consideration he would prefer to leave the cul-de-sac empty.

DR. DUER expressed the opinion that the shortening of the cervix during pregnancy would prevent the evil alluded to by Dr. Goodell.

DR. GITHENS asked if the ancient dogma of shortening of the cervix during pregnancy had yet any adherents. Instead of being shortened he had always found an apparent increase in the length of the neck, and the anterior lip will during labor reach down and be engaged between the head and the os pubis.

DR. GOODELL acknowledged that his objections to Dr. Duer's plan were perhaps theoretical, but he contended that there was no shortening but lengthening of the cervix during pregnancy. In one case he had made five applications two and one-half inches up to the supposed fundus of a womb, without suspecting the existence of pregnancy, which had not been known to either the patient or her husband, himself a physician. But it was evident he had only reached the os internum, for no abortion occurred in this case; the child being carried to full term.

DR. J. H. PACKARD considered suppositories of opium useful in quieting the uterus during the action of the tampon.

DR. J. L. LUDLOW had followed this practice with benefit; he preferred the local to the internal use of opiates.

DR. THOMAS BETTS had been called in consultation to a woman who had been in labor four days; the os had a diameter of one and one-half inches, and was quite rigid; the pains were frequent, but availed nothing. He gave a full dose of morphia;

it was followed by a quiet night, and in a few hours he found the os dilated and softened, and he delivered by means of the forceps.

Dr. KELLY had frequently given morphia in cases of rigid os; he had not found it had any effect in quieting the pains, but it increased their effect and removed the rigidity; in fact he would not leave a patient after having given her an opiate, as the progress of labor then became more rapid. He would be afraid to use opium in placenta prævia, for fear that it might interfere with the contraction of the uterus after it had been emptied.

Dr. BETTS answered Dr. Kelly, by alluding to the use of opium by the latter to hasten labor, and also called attention to its employment in cases of free hemorrhage after surgical operations. It was needed for its stimulant effect on the brain.

NEW GALVANO-CAUTERY BATTERY.

Dr. WHARTON SINKLER exhibited a galvano-cautery battery, manufactured by the Galvano-Faradic Co. of New York.

The instrument was modified by Dr. Piffard, from Dawson's battery.

The advantages it possesses over the ordinary Caution batteries, are: Simplicity of construction, small size, and constancy of working.

The box which contains the apparatus is $9\frac{1}{2} \times 9 \times 6$ inches.

The battery consists of three pairs of zinc and platinum elements, which are attached above to a hard-rubber platform. This platform is suspended by a pivot on each side, so that it can be rocked to and fro. By this rocking motion the liquid in the cells is agitated, and the bubbles of hydrogen removed from the platinum plates.

The zincs are easily detached for amalgamation when necessary.

The electrodes come in a separate case, and consist of an écraseur dome, cauterizer and knives.

The battery fluid is made of twenty fluid ounces of sulphuric acid to five pints of water, and a half pound of bichromate of potassium.

Dr. Sinkler showed the battery in action, and cut through a large piece of fresh beef with the hot wire loop.

SODIUM CHLORATE.

Dr. J. L. LUDLOW called the attention of the Society to the use of sodium chlorate in cases of diphtheria. The potassium

salt which had been the sheet anchor of the treatment of certain classes of this disease, was very insoluble. This trouble was entirely avoided by the use of the sodium compound. 3 iij. of the latter are soluble in f ̄ ss. of water, while the same quantity of the potassium salt would require f ̄ vj. It is a good anti-plastic. He had used it in mild cases with beneficial effect, and would recommend it to others for the same class of cases.

DR. SINKLER called the attention of the Society to the fact that Dr. Jacobi, of New York, had met with cases of aggravated cystitis, following the long-continued use of potassium chlorate, and suggested that the danger might be avoided by the use of the sodium salt.

Stated Meeting, April 5, 1877.

DR. JOHN H. PACKARD, *President, in the Chair.*

DR. WM. GOODELL related the following case of

RUPTURE OF THE WOMB.

MRS. O'H., about thirty years old, gave birth to her first child some two years ago. After being in labor over forty hours, and after repeated trials with the forceps, she was delivered of a small, dead infant, by one of the most experienced physicians of this city. Her convalescence was slow but perfect, and she soon after removed to a village about nine miles off. On Friday, March 23d, at 10 P.M., she went into labor with her second child. The pains became active towards morning, and at 9 A.M. on Saturday she sent for the physician who had been engaged to attend her. He was sick, and my friend Dr. Thomas Betts was called in. He reached her house at 11 A.M., and, finding the os fully dilated, broke the bag of waters, which filled up the vagina. The cord at once prolapsed and the head presented, but so high up as to oblige him to introduce his whole hand to ascertain the position, which proved to be R. O. P. The expulsive pains were at first strong, but soon became feeble, and very shortly after the woman began to vomit and to fall into an unaccountable state of collapse, with pale features and thready pulse.

Fruitless efforts having been made to replace the cord, and the above unfavorable symptoms continuing, Dr. Betts called in a neighboring physician, who arrived at 2.30 P.M. Efforts were again made to replace the cord and to improve the position. After an hour's work this was accomplished, and the forceps put on, but not without much difficulty. For over an hour, traction was made alternately by each physician, but the

head refused to descend, or even to engage, and version was accordingly decided upon. After the administration of ether, one foot was brought down, but that was all. The breech refused to follow, and no prudent force was capable of turning the child. It was now hard on to 6 o'clock P.M., and I was sent for.

Reaching the house at 11 P.M., I found the poor woman very pale and very weak, but with no external hemorrhage. Her intelligence was perfect, and, at her urgent request, ether was at once administered. An examination now disclosed the fact that a rupture had taken place. The vagina was so crammed with intestines that, by opening the vulva, I was enabled to show their blue and congested coils to the two gentlemen present. Carrying in my whole hand with great gentleness, I found the womb also filled with bowels, and so limp that its walls could not be easily defined. Nor could the size of the rent be determined, for it seemed as if the whole fundus had been torn off. Yet I am pretty sure that the rent was in the womb and not in the vagina. The child had, of course, escaped, but to my astonishment it was beyond reach, and actually lost in the cavity of the abdomen. By external palpation I knew that it lay transversely under the shelf of the diaphragm; but loops of intestines so obstructed the way to it that I could not get there without using unwarrantable violence. Being thwarted in every gentle effort to reach it, I decided to deliver the woman by laparotomy. Strangely enough, not one of the three physicians present had a pocket case, or as much as a bistoury about him. So a messenger was dispatched for the needful instruments to the nearest physician, who lived a mile off.

While we were awaiting his return, I carefully measured the pelvis by finger and rule. It was a generally narrowed flat pelvis, with a diagonal conjugate of about 9.5 centimetres (3.75 inches). I also took the opportunity of again hunting for the lost child, and, while groping about near the left kidney, discovered a prominence which, through intervening bowels, felt very like an exostosis. Led by curiosity to examine it more closely, I found it to be a child's foot. With this one as a guide, the other foot could have been secured, but I was afraid, if both feet were seized, that the legs might get astride of some bowel-loop. So I contented myself with making gentle traction on this foot, and soon had the satisfaction of getting it outside of the vulva. The bowels parted and receded before the half-breech, as water before the prow of a ship, and the trunk was before long born, not, however, without very strong traction. By supra-pubic propulsion, made by the free hands of the two physicians, who were holding the woman's legs, and by traction made by myself, the head passed the brim; but

without a jerk, and not until the neck had been overstretched. I do not think that a traction force of over seventy pounds was put upon it, yet the spinal column parted near the shoulders. But the child had been dead for many hours, putrefactive changes had begun, and the muscles had become sodden. The further passage of the head proving also difficult, the suboccipital region was perforated, and the brain broken up. The skull collapsed, and a child, weighing about seven pounds and a half, was very shortly afterwards born. Tracing up the cord, I found the placenta lying near the spine among the bowels. It was easily removed. During all this time there was no bleeding without, and apparently none within; but I now scooped out of the abdominal cavity several handfuls of old clots.

The woman's pulse, bad enough before, had by this time become so fluttering that a priest was sent for. I thought she would not live till morning; but by dint of stimulants and of large doses of opium, she slowly rallied. Very shortly after midnight I left for home, and did not see her again. For her subsequent history I am therefore indebted to Dr. Betts, who kindly furnished me with the following daily bulletins of her condition:

"On Sunday I saw her about 11 A.M. She had grown calm, comfortable, and cheerful. Tongue clean, pulse 112, and soft. The womb was well contracted, below the umbilicus, and not tender. The abdomen very moderately distended, and only fairly resonant. In an ordinary case I should not have remarked anything unusual. I continued beef-tea, brandy, and quarter-grain doses of morphia every three hours."

"On Monday, Dr. Bellows and I met. The patient much as yesterday. Pulse, 104; respiration, 36. Had passed a pretty comfortable night, until early in the morning, when, after some discomfort at the pit of the stomach, she vomited a considerable quantity of bile, and a lumbricoid about ten inches long. We now removed all soiled clothing, had her sponged about the genitals with warm water and whiskey, and, much to her gratification, put her in a clean condition."

"Monday evening I saw her all alone. The abdomen is more flaccid, the womb smaller, and the lochia well established. Passes her urine freely and is doing wonderfully well. She continues excessively sallow, although the whites of her eyes are not affected. Pulse 120, but soft and regular. Stopped the morphia, and gave two grains of quinia every four hours."

On Tuesday, March 27th, Dr. Betts wrote me that she was doing so well that he paid her but one visit on that day. But on Wednesday morning he was summoned to see her. He found

that she had been vomiting during the night, and "had also passed an enormous quantity of well-formed feces, besides three or four looser stools." Her respirations were 40 to the minute, her pulse 112. She complained of severe pain in the lower third of her left lung, and her abdomen was tender and tympanitic. It was evident that septicæmia had set in.

"By Wednesday evening she was decidedly worse; pulse scarcely to be felt at the wrist, and cannot be counted. Bowels loose; decubitus dorsal with the knees drawn up; tympanites worse, and peritonitis very marked."

On Thursday she seemed better, but only to become worse on the next day. After lingering on through two days more she died on Monday morning, April 2d, on the ninth day after her delivery.

In looking back upon the history of this interesting case, I can find no fault whatever with the conduct of the physicians in attendance. Although the patient was so poor as to put remuneration out of question, these gentlemen gave up their other practice to wait upon her, and one of them rode over forty miles in getting assistance for her. Craniotomy might, perhaps, have been performed earlier; but no question is so difficult to decide as that of the time when the head should be opened. Besides, the religious prejudices of the family interfered with the freedom of action on their part. One who has not practised in the country cannot conceive of the mental and physical prostration induced by a bad obstetric case, rendered worse by such surroundings and such prejudices. But while I acquit these gentlemen of all blame, I am not so well satisfied with my own share of the work.

In the first place, I think that, under the circumstances, I was wrong in resorting to supra-pubic propulsion. The child had been dead for many hours—so many that its muscles had lost their power of resistance, and there was, therefore, no need to keep any terms with it. The sole indication was to deliver the mother with as little injury to her as possible, and this was hardly met by strong pressure put upon a womb already shockingly torn. While propulsion was being made the danger flashed upon me, and I stopped the pressure, proceeding at once to lessen the bulk of the head. I do not think that this manœuvre had anything to do with the woman's death, but that in nowise alters my opinion of its hazard under such conditions.

In the second place, the woman should not have been delivered *per vias naturales*. Her blood was poisoned by decomposition of the clots left in the abdominal cavity. She died, clearly from septicæmia, and not from the uterine lesions, nor from any injuries which the parietal or the visceral peritoneum

may have sustained. This was shown by the perfect contraction of the womb, and by the favorable symptoms of the first four days. It was not until the fifth day that any untoward symptoms set in. Hence, I cannot but think that our lack of a pocket-case was a misfortune. The operation of laparotomy would at least have furnished the means of removing these abdominal clots, and would, therefore, have given the poor woman a better chance for her life. The classical statistics with which Trask has enriched our medical literature, teach the same lesson, for they conclusively show that when the child has escaped into the abdominal cavity, the operation of laparotomy has resulted more favorably than that of delivering per vaginam through the rent.

DR. J. L. LUDLOW inquired what space of time had elapsed between the examination which revealed the rupture and the one next preceding it.

DR. GOODELL replied that six hours had elapsed since the previous examination had been made, and during that time the rent may have increased.

DR. LUDLOW remarked that this was one of those unfortunate cases that truly appall us; but when we consider the immense force with which the uterus contracts, and its attenuation when stretched over angular portions of the child's body, we wonder the accident does not occur more frequently. He inquired of Dr. Goodell whether the rent was transverse or longitudinal, and if the patient was the subject of any scrofulous or other debilitating taint.

DR. GOODELL replied that the laceration was longitudinal, and extended from the vertex to the fundus. He had no knowledge about the patient having been the subject of any diathesis; she appeared to be a healthy woman. As to the conduction of the case previous to his being called in, no imputation should be cast upon any of the three physicians in attendance; they were all reliable and accomplished men, with good experience in obstetric practice. The apparent neglect was the consequence of the poverty of the family and the distance from all assistance and from the source of drug supplies, making it necessary for Dr. Betts to attend personally to all his errands.

DR. WM. SAVENY considered that the operation of abdominal section would have given the best chance for life in this case, as the abdomen could then have been more completely emptied of blood-clots, with less danger of contusing the peritoneal surfaces.

DR. R. A. CLEEMANN related the history of a case of

HEMORRHAGE FROM PLACENTA PRÆVIA,

in which rupture of the membranes seemed to stop the uterine contractions instead of increasing them. As the child was dead he tried to deliver the placenta before applying the forceps, but found it a much more difficult operation than it is described to be, and had only partial success.

EFFECT OF PROLONGED LABOR UPON THE LIFE OF THE CHILD.

DR. CHAS. H. THOMAS reported a case in which he had been engaged, some four months before, to attend during labor. It was the sixth pregnancy. Five children had been dead-born. There was no history of syphilis. The children had, with one exception, been alive at the commencement of labor. The most remarkable circumstance which had characterized the labors was their great tediousness, beginning with very slight, scarcely noticeable pains, lasting in each instance several days before active contractions appeared. She had always been attended by good physicians. Three of the confinements were under the supervision of a celebrated obstetrician of Burlington, Vt.

Dr. Goodell was called in consultation by Dr. Thomas, and the resolution was formed to wait until labor commenced spontaneously, and then to "push things."

He finally received a summons, with the statement that two or three pains had been felt. On making an examination, he found the cervix partially obliterated, and the os soft and patulous. He made all his arrangements, and went the next day prepared to stay until all was over. Having notched his nail, he passed his finger through the dilatable os, ruptured the membranes and let out some of the water. When the next pain came he held the head away and allowed more to escape. The condensation of the uterus increased the force of the pains, and the administration of $\text{f}\text{3j}$. of Squibb's fluid extract of ergot intensified and rendered them severe and almost continuous for one and a half hours. The head by this time was half-way down the pelvic canal. The forceps were applied without difficulty, and a screaming, vigorous child was delivered in fifteen minutes. There had certainly been no fault of nutrition here. The time occupied from the rupture of the membranes to the delivery was scarcely more than three and a half hours.

Very violent after-pains lasted for forty-eight hours. Dr. Thomas was very much worried at their unexampled severity, and for the first two hours feared collapse. Large doses of opiates were used, by the rectum, with but slight effect. During this time he wedged his finger into the tightly contracted

nterus, and detected some small pieces of placental tissue attached near the fundus; these he loosened and extracted, and thus gave partial relief. The placenta had been examined when first extracted, but seemed to be entire.

Stated Meeting, May 7, 1877.

DR. JOHN H. PACKARD, *President, in the Chair.*

DEATH FROM RUPTURE OF A CYST OF THE BROAD LIGAMENT.

DR. W. H. PARISH exhibited the pelvis and soft parts from a case of cysts of the ovary and broad ligament, complicated by procidentia uteri, and read the following history of the case and the autopsy.

"A. B., æt. 62 years, was admitted to the Philadelphia Hospital in 1866, and for a short period was under surgical treatment for an 'ulcer,' the nature or location of the ulcer not however being designated in the Record Book of that date. She was soon transferred to the Women's Out-wards or the Alms House proper. There, among several hundred old women, she passed from under all direct medical observation. There is no ascertainable history of medical attendance from the date of leaving the surgical ward until the day of her death.

April 17, 1877. Dr. Horwitz, one of the internes, was summoned to visit her. He found her in a moribund condition, with symptoms indicative of shock. From the attendant in immediate charge of the ward, he learned that about five years previously, the woman's abdomen was noticed to be increased in size. The enlargement at first was most evident to the left of the median line, but a few months prior to death the enlargement extended over the abdomen generally. She, however, continued to walk about, without manifesting discomfort or pain. On the morning of her death, on attempting to get on her feet from the bed, she experienced a sharp pain in the abdomen. Soon syncope came on, and death from shock occurred within two hours after the occurrence of the pain.

The *autopsy* was made twenty-four hours after death. There was marked emaciation, and a relaxed, wrinkled condition of the integument. There was no œdema. There was extreme *procidentia uteri*. The abdomen was greatly enlarged, with the shape and physical signs of ascites. On opening the abdominal cavity through the *linea alba*, about three gallons of a limpid, slightly reddish fluid escaped. Unfortunately, none of this fluid was saved for examination. A small quantity of pus was found in the posterior portion of the abdominal cavity.

The digestive canal, liver, spleen, and kidneys presented nothing abnormal.

A large cyst capable of containing about three gallons of fluid was found in a state of collapse. Near its summit in the postero-lateral wall was an opening large enough to admit with ease three fingers. Around this opening the cyst wall was very much attenuated, and was covered externally with pus and lymph. The cyst walls generally were about $\frac{1}{4}$ of an inch in thickness, and of a deep lilac, mottled appearance on the peritoneal surface. The cyst was monolocular without any ascertainable remains of septa, and there were no peritoneal adhesions, excepting at its extreme lower portion. Near the lower portion was a sacculated condition, where the walls had undergone an extreme degree of attenuation, without indications of ulceration. The attenuation being apparently due to distention only.

The pedicle was about the width of the four fingers, and seemed to spring from either the left broad ligament in the region of the organ of Rosenmüller, or from the external portion of the hilum of the ovary.

Numerous blood-vessels could be seen entering the pedicle. The left ovary was elongated and diminished in size in its other diameter. It contained a small cyst about the size of a split pea with translucent liquid contents.

The left Fallopian tube measured 22 inches in length, and extended over the upper and posterior portion of the cyst. It was in the wall itself of the cyst. The ampulla was greatly enlarged, admitting a good-sized bougie for 10 inches. The tubo-ovarian fimbria was also a part of the cyst wall, and measured 18 inches. This fimbria and the Fallopian tube formed a narrow band, that encircled, excepting the pedicle, the entire cyst near its middle.

The peritoneum was easily separable from the cyst. At various points on the general peritoneum were roughenings of lymph, indicative of a slow peritoneal inflammation, without adhesions to the cyst.

The left round ligament was not lengthened, and there was but slight elongation of the ovarian ligament.

The uterine appendages of the right half of the pelvis presented nothing abnormal, excepting that the different ligaments were lengthened by stretching.

The fundus of the bladder was above the crest of the pubes. The whole bladder was elongated and there was some thickening of its walls.

The uterine fundus was deep in the pelvis, but little above the inferior strait.

Douglas' *cul-de-sac* was large and deep. At the interior por-

tion of its floor was a point of puckering, through which the finger could be easily passed, following the utero-rectal pouch into the posterior portion of the procident mass, and showing that this mass contained to within one half-inch of its extremity a prolongation of the peritoneum. As the finger passed through this point of puckering, it impinged against a resisting band posteriorly, and an external examination showed this to be the anterior border of the perineum. The proximity of the procident uterus to the perineum must have presented the only obstacle to the small intestine becoming a part of the *procidentia*. The perineum was short, but seemingly so from distention, and not from laceration.

The rectum was but slightly if at all prolapsed, and did not form a portion of the procident mass.

On introduction of the catheter, the urethra was found so bent from its natural course, that the concavity of a male catheter had to be turned downwards and forwards before the bladder could be reached. The bladder was sacculated, a portion entering into the formation of the anterior portion of the *procidentia*, and reaching about one inch external to the vulvar orifice.

The vagina was in a state of complete eversion, its walls thickened and the mucous membrane dry and skin-like.

The infra-vaginal portion of the uterus was but slightly elongated. The posterior lip was three-quarters of an inch—longer than the anterior; was tapering, and formed the *col tapiroide* of some writers.

The entire length of the uterus was six inches. Its increased length was due mainly to an elongation of the supra-vaginal portion of the neck. When rolled between the fingers this portion was recognized as firm and resisting, and about the size of the largest-sized bougie.

The body of the uterus was but little above the normal dimensions.

Simpson's sound passed about one inch into the uterine canal, but no further, there being doubtless an occlusion of the cervical canal.

To shock resulting from the rupture of the cyst must be attributed the woman's death. It is remarkable that her condition should not have occasioned discomfort or pain sufficient to have brought her under medical observation before the rupture. The woman had been married, but it was impossible to ascertain whether there had ever been pregnancy. The duration of the *procidentia* could not be ascertained. An attempt was made to ascertain by inquiry of the attendant and others if the *procidentia* antedated the appearance of the abdominal tumor, or had developed at a more recent period. But this

point could not be thus determined. The history of the case can thus give no aid in determining the possibly causative relationship of the cyst to the procidentia.

The origin of the cyst was not positively determined, *i. e.*, whether ovarian or parovarian. It was doubtless such a cyst as has often been classed as ovarian. But the statement of West, that a parovarian cyst never gets larger than the two fists, and is always possessed of exceedingly delicate walls, is no longer to be accepted as correct. And yet the statement that all unilocular cysts are parovarian cannot be accepted.

The characteristics of the cyst correspond with remarkable exactness to those given by Dr. Bantock in the XV. Vol. of the Transactions of the London Obstetrical Society, as being undoubted evidences of a parovarian cyst. These characteristics are the *easy* dissection of the peritoneum from the tumor; the great elongation of the Fallopian tube, and of the tubo-ovarian fimbria, and the encircling of the cyst by these two structures; the unilocular nature of the cyst; and also the limpid and slightly reddish character of the fluid, though it is to be regretted that this was not submitted to a careful examination. The presence of a minute cyst in the ovary would, however, seem to imply a tendency in the ovary to cystic degeneration. Yet the ovary, with this exception, seemed healthy, and its elongation could have resulted from either an ovarian tumor, or a cyst of the organ of Rosenmuller."

DR. H. LEXOX HODGE considered the specimen very interesting and rare. He looked upon it as a case of procidentia accompanied by a cystic tumor. It was not probable that the tumor had been the cause of the procidentia. His reason for this opinion was his experience, that in cases of tumors of the ovary or broad ligament, the tendency often is to lift the uterus above the superior strait. This is especially so when, as in this case, the cyst is unilocular and uniformly supported by the brim of the pelvis.

Another point of interest is the nature of the tumor. It has all the characteristics of a cyst of the broad ligament, both as regards its anatomical relations and its thin fluid contents.

There is also, in this case, a small cyst in the ovary. Dr. Hodge was the first, perhaps, to speak of the generality of the relation of these two classes of cysts. In some cases of tumor of the broad ligament, although the liquid drawn by the first tapping is like spring water, it will return, and the second time the fluid is different and evidently ovarian. In a recent examination, made after the successful removal of the tumor by operation, he had found ovarian cysts actually protruding into a cyst of the broad ligament. He did not think, when these

circumstances are considered, there existed any grounds for the difference of treatment in the two classes of tumors. An operation for removal should in either case be undertaken when the general health is beginning to suffer. Tapping frequently will not cure cysts of the broad ligament. There is danger of rupture of the cyst, as occurred in this case. If the tumor recurs after tapping, rapid refilling will break down the health.

DR. PARISH could not answer the question as to the priority, in this case, of the cyst or the procidentia. He had examined carefully for external and internal signs of pregnancy, but found none. The patient was an old woman with relaxed tissues, and a prominence of the lower part of the tumor occupied the pelvic cavity and would have pressed directly upon the uterus.

DR. EDWARD L. DIER questioned the probability of the procidentia being the result of the pressure of the tumor, as the prolapse is due to an increase in size of the uterus. This increase is mainly of the supra-vaginal portion of the cervix, the fundus occupying its proper position.

DR. PARISH replied that the fundus of the uterus was not in its proper position at the time of making the autopsy. It was at the level of the inferior strait. He suggested that the increase in the supra-vaginal portion of the cervix might be subsequent to the occurrence of the procidentia, and be caused by it.

RUPTURE OF OVARIAN CYSTS.

DR. ANDREW NEBINGER inquired if, in the experience of members of the Society, any cyst had been known to rupture spontaneously, and what consequences had followed such rupture?

DR. DIER had known of an instance of spontaneous rupture of an ovarian cyst through the vaginal wall; it was followed by recovery.

DR. HODGE had never seen a case of spontaneous rupture of an ovarian cyst into the peritoneal cavity followed by recovery. He had, however, heard of one case in which the rupture was the consequence of a fall; it was followed by severe shock, but recovery was rapid and complete. The only case of rupture into the peritoneal cavity which had come under his own observation was under the care of Dr. Wm. Porter. Dr. Hodge had been asked by Dr. Porter to meet him in consultation, but before the time had been fixed a woman had attempted to remove an incurvation of the extremity of the ensiform cartilage by means of a common tumbler used as a cupping-glass, upon which strong traction was made after it had firmly fastened itself; during the pulling the patient felt something give way. Death followed from collapse. The tumor had disappeared.

DR. NEBINGER related that some nine or ten years ago he had been invited by Dr. Ellerslie Wallace to see a patient of his, a trucker and market-woman, who had slipped while getting into her wagon and fell upon her abdomen, rupturing an ovarian cyst. The accident was followed by shock and prostration; the abdomen, which had been prominent and tense, was now flaccid and spread out. No inflammatory symptoms were developed, and recovery was perfect as far as the injury was concerned. He saw her again after some two or three weeks had elapsed, and the abdomen was much smaller. The woman is still alive and has had no return of the cyst.

Since the accident just related he had been called to see a lady who was spending the summer at Saratoga. She had been suffering for some years from an ovarian tumor. On this occasion she had been awakened from sleep by a violent pain in the abdomen. The round form of the abdomen had been entirely lost and the tumor had disappeared; there was no subsequent sickness; the abdomen gradually grew smaller, and there was no re-development within eighteen months.

DR. DUER moved that the specimen be referred to a committee. Approved.

The President appointed Drs. Duer, Parish, and Hodge.

TREATMENT OF SUPRA-VAGINAL ELONGATION OF THE CERVIX UTERI.

DR. PARISH asked for the experience of the Society as to the effect of amputation of the os uteri in cases of supra-vaginal elongation of the cervix.

DR. DUER had repeatedly operated, but doubted the desirability of amputation; he considered rest in bed an efficient curative agent. If the os be blistered by the cautery and returned to its proper position, as good results would be obtained as by amputation. The prolonged rest required after operation for lacerated perineum always resulted in the restoration of the uterus to its size and position. The dangers attendant on amputation of the os uteri rendered the operation an unadvisable one.

DR. HODGE agreed with Dr. Duer. He had succeeded in reducing the size of a hypertrophied uterus by restoring it to its position and enjoining complete rest in bed. He did not think the cautery or seton a necessity.

DR. DUER mentioned that if the perineum is defective or weakened, even if no laceration has ever occurred, no good result can be maintained without resort to the operation of perineorrhaphy. During rest the uterus will diminish in size, but as soon as the upright position becomes habitual again the hypertrophy will recur.

TRANSACTIONS OF THE CINCINNATI OBSTETRICAL SOCIETY.

Reported by J. W. UNDERHILL, M.D., Secretary.

Stated Meeting, January 11, 1877.

DR. A. J. MILES, *Vice-President, in the Chair.*

DR. J. C. McMECHAN read a paper on

DELIVERY BY EXTERNAL PRESSURE,

of which a synopsis is here presented.

Historical Sketch.—We can easily imagine that in ancient times, before midwifery became a science, and before podalic version and the forceps came into use, delivery by external pressure must have been tried often and often—sometimes with success but oftener without success, owing to its having been tried in cases not suitable for the procedure. In ancient times *vis a tergo* was used in place of our modern *vis a fronte*, and as far back as the twelfth century Albucasis refers to delivery by external pressure in the following words: “Cum ergo vides ista signa, tunc oportet, ut comprimatur uterus ejus ut descendat embryo-velociter.” A whole chapter of his book is devoted to the subject of forcible delivery, and at his day external pressure was one of the principal manœuvres practised in the delivery of the fœtus. In 1554 Jacob Ruff published a work at Zurich, entitled “A Beantiful, Funny, and Consoling Little Book on the Conception and Birth of Human Beings,” in the first chapter of the fourth book of which he gives the following advice: “A skillful woman at this time must stand behind the woman in labor, and placing both arms around her and over the abdominal wall must press downwards until the child is delivered.” In 1594 Rodericus a Castro recommended midwives in their practice to make pressure over the woman’s abdominal wall, in order to press the fœtus downwards. According to Dr. S. M. Mouser,¹ the Indians of the Pacific coast must follow nearly the same line of procedure, as

¹ Boston Gynecological Journal, Nov., 1870, Vol. III., p. 274.

he says: "In such cases a female friend of the patient acts the part of midwife, seats herself on the ground, her back resting against a tree. The patient is seated on the thighs, her back resting against the abdomen of the midwife. During the expulsive pain the midwife embraces the abdomen of the patient with both arms, making firm pressure, relaxing her embrace during the interval, and thus continuing the process of pressure and relaxation until the completion of labor, and in case the placenta is retained the midwife walks upon the abdomen of the patient until it is expelled." John Von Hoorn, in the 30th chapter of his "Siphra and Pua," seems to have had a very good idea of this manœuvre, as he says: "If the woman is not delivered in a few hours we ought to assist her by external pressure. She should lie upon a comfortable bed and the pains coming on, the uterus, if found lying laterally, should be pushed to the median line of the body, and the midwife, placing the palms of the hands over the uterus, pressure should be made downwards. I have often witnessed this manœuvre and have often seen its good effects in assisting the delivery of the child." It was Von Ritgen,¹ however, who described this manœuvre and its advantages, in an article written in 1856, in which article he says very truly, "Why do we always drag and never push out the fœtus? The natural mode is by pressing out the fœtus, and why should we not imitate nature?" Although Von Ritgen described this procedure in a very beautiful, full, and concise manner, he never practised it himself. Kristeller, however, on reading Von Ritgen's article, and being convinced of the practicability of this method of delivery, tried it in nineteen cases with success, and reported the results of his experiments and investigations in the "Berliner klinische Wochenschrift" for 1867, No. 6. He also invented a dynamometric forceps to demonstrate how little force is required to extract a head that has lain for hours unmoved, and he found that a force of from 6 to 8 pounds was often sufficient to deliver the child in such cases. Ploss, in the "Zeitschrift f. M. Ch. und Geburtskunde" for 1867, advocated this procedure. Abegg, in a work entitled "Zur Geburtshuelfe und Gynækologie;" Playfair, in the "London Lancet" for 1870; and Barnes, in his "Obstetric Operations," all refer to this mode of delivery in very flattering terms.

Method of Delivery by External Pressure.—According to Kristeller, the patient is to lie on her back and the obstetrician is to stand at one side of the bed, and he is to endeavor to push

¹ Von Ritgen, ueber das Entbinden durch Druck statt Zug. Monatschrift f. Geburtskunde, 8 Bd., S. 233.

away all portions of intestines from the uterus and to bring that organ into axis with the pelvic inlet. After this he is to seize the uterus in such a way with his hands that the external borders of the little fingers will look towards the pelvis and the palms of the hands grasp the fundus or sides of the uterus at its upper half, whereby the thumbs will lie over its anterior surface and the fingers are to be spread over its posterior surface as far as possible. The hands on both sides must be applied at about the same level. Upon this the obstetrician is to gently begin pressing the abdominal wall against the womb, and keeping his hands applied at the same points he increases the pressure until considerable force is expended upon the uterus. If the os is but slightly dilated the pressure should be lateral, but if the os is well open the pressure should then be made principally at the fundus. According to the exigencies of the case and the sensitiveness of the patient, a pause of $\frac{1}{2}$ to 3 minutes is to be made and the pressure commenced again, and at the same time changing the point of compression slightly. Each compression should last from 5 to 8 seconds. The compressions are to be made 10-20-40 times, and towards the end of labor they are to be made in more rapid succession and the points of pressure are to be closer together. Sometimes a few compressions are sufficient to terminate a tedious labor. If no progress in the process of labor occurs after 20-40 compressions have been made, it is better to desist from further efforts. In pluriparæ, in women with thin abdominal walls, in twin births where one child has been born, this method proves most successful. On the contrary, where the abdominal wall is thick, this method is attended with greater difficulty, but it is particularly easy of performance when the patient is etherized.

Objections to this Method.—It might be said against this method that the pressure might cause such irritation of the uterus and its surroundings that peritonitis might be excited or that the utero-placental circulation might be interrupted. In answer, it may be said the compressive force is exerted over such a broad surface and is so slight that it can do no harm; and then again, the uterus has far more tolerance for such compression than was formerly supposed. In regard to interrupting the utero-placental circulation, there is no danger of this, as the compressive force used is not as great as that caused by the natural contractions of the uterus.

Advantages of this Method of Delivery.—Abegg of Dantzig¹ states the advantages of the method of delivery by external pressure, as follows:

¹ Zur Geburtshilfe und Gynekologie, Berlin, 1868, p. 32.

1. It shortens the duration of labor.
2. The normal position of the child is preserved during extraction by the forceps.
3. It often renders the application of the forceps unnecessary.
4. There is but slight danger of injuring the perineum.
5. In breech presentations it prevents the arms from being carried upwards.
6. It hastens the delivery of the shoulders after the head has been born.
7. It renders delivery by the forceps much easier.

The external pressure has the effect of increasing the labor pains and of hardening the uterus. It dilates the os uteri and causes a gradual descent of the fœtus through the pelvic canal. In regard to the external pressure dilating the os uteri we have no better method of effecting this object than by this method, and often after morphine and ether have failed the external pressure will be used with success. In case there is hemorrhage during labor this method is preferable to any other, as the uterus is compressed as the fœtus is gradually delivered and the danger from hemorrhage is thus lessened. In comparing this method with that of delivery by the forceps, it may be said that to deliver with the forceps the membranes must first be ruptured by this; it is not necessary that they should be ruptured, and in fact it is better that they should not be. The danger by this method is almost nothing in comparison to delivery with the forceps; for every time the forceps are applied there is more or less danger of injuring the bones of the cranium, and there is also a danger of tearing the perineum with these instruments. By using external pressure we avoid both these dangers. In cases where the forceps cannot be readily adjusted, by this method we can press the head down sufficiently so as to be able to apply them. In cases of shoulder presentation Braxton Hicks lays down the rule that we should always try and perform cephalic version first, and failing in this we can then have recourse to podalic version. Abegg, in imitation of this remark, says, "we should first attempt delivery by external pressure, and failing in this we can then apply the forceps."

Cases.—Kristeller, in his last essay on this subject, reports nineteen cases in which he delivered by external pressure. In fourteen cases this method of delivery alone was used, but in the remaining five cases it was combined with other methods. Of the women delivered, four were primiparæ, fifteen pluriparæ. In six of the cases the breech presented, in twelve the head. Three of the children were premature and were born four to six weeks before the proper time, and were dead before

the commencement of labor. All the remaining children did well, and all the mothers made good recoveries. A number of interesting cases of delivery by this method are related by Abegg in his work already referred to. In concluding this article I shall quote two cases occurring in the practice of Dr. Playfair,¹ of London, which cases prove in the clearest manner the practicability of this method of delivery.

CASE I.—“Labor commenced at 12 M., February 23d, 1868. At three A.M. on the 24th the membranes had been ruptured for several hours, and the os was fully dilated. The pains were frequent and regular, but they had no effect in causing the head to pass through the brim. During the pains it partially engaged at the brim, but always receded during the interval. After waiting it seemed as if the forceps would be required. Von Ritgen's method was now tried. The patient was placed upon her back, and firm pressure was made over the uterus. The good effects of this manœuvre were very striking. The first pain was manifestly increased in strength and duration, and the head was felt to advance as it was pushed down, and in about six pains the head was expelled.”

CASE II.—“On the 10th of August, during the day, the pains were feeble. At 10 P.M. the os was slightly dilated; the pains became stronger at 1 P.M., and at 3 A.M. the os was pretty well dilated. At 4 A.M. the membranes ruptured, and an enormous quantity of water was discharged. At 6 A.M. the os was fully dilated, and the head engaged at the brim in the first position. The pains were scarcely worthy of the name. Ergot was given, but without the desired effect. I waited until 11 A.M., and then made up my mind to apply the forceps. The husband objected. This method was tried, pressure being made every five minutes. The labor was quickly terminated in this way.”

This procedure certainly has a great future before it, and, as life can certainly be saved by this method of delivery, we should endeavor to bring it into practice again. It was about the only method of delivery used by our forefathers, and we should not discard it now because we have other methods of delivery.

DISCUSSION ON DR. McMECHAN'S PAPER.

DR. W. T. BROWN.—“I have not given much thought to the subject treated in the paper, and cannot, therefore, discuss it very satisfactorily. I think I would prefer the forceps in some of the conditions in which delivery by external pressure has

¹ London Lancet. 1870.

been recommended. Still there are certainly a few cases in which the method proposed might prove very useful."

DR. TRUSH.—"I have tried delivery by external pressure to some extent. In only one case where I have employed it am I satisfied that it accomplished good. That was in the case of a primipara whose family objected to the employment of forceps. By this method in two hours the child was expelled. Yet I cannot tell how much this agency of external pressure effected in delivery in this instance. I am satisfied a part of the good effects was due to the external pressure. Of the cases related by authors who have employed this plan, we are left in the dark as to how much of the good effects is due to the *direct* pressure, and what proportion is due to the *increased action of the uterus* induced by the irritation excited in that organ by the application of external pressure.

One point not touched upon by the essayist, relates to the use of pressure in the third stage, though probably he thought that would not properly come within the scope of the paper. I think the method proposed would be of little use as a dilating force in the first stage of labor. Certainly it would be of much more value in the second stage, and in some cases would prove a valuable auxiliary to the forceps. Perhaps its greatest value will be found in hastening delivery of the head in breech presentations. In conclusion, I will add that I believe women will very generally object to its employment in ordinary cases of labor, because of the increased pain to which it would give rise."

DR. CLEVELAND.—"I am not very familiar with this subject practically, but I have been instructed by the admirable paper read this evening. In my opinion, external pressure is of no use in the first stage of labor, though of value often in the second stage—as an excitor of contractions in the uterus if not otherwise. Possibly, however, some assistance toward expulsion may be rendered directly through the force applied. My attention was called to a case some time since in which the midwife bore heavily upon the abdomen of the parturient woman and yet failed to accomplish delivery. I was called and extracted the child by forceps. The patient died shortly afterward from a form of puerperal fever, and the family still believe that the woman's death was superinduced by the pressure which she had been subjected to by the midwife. I am not satisfied, however, that this was the case. It will not often happen that we can employ this method in our private practice, even though we be satisfied of its efficacy, because women will object to it from motives of delicacy and also because it has a tendency to increase their pains. I thank the

essayist for the article because it develops a subject upon which I have thought insufficiently. Yet I must add that the method proposed is one which can never become a substitute for the forceps."

Vice-President Miles then called Dr. W. T. Brown to the Chair.

DR. MILES.—"I have seen excellent results from external pressure in a few cases of breech presentations where the head had been retained. In such a case, especially when the pains are inefficient, if proper traction be made at the same time upon the child's limbs, external pressure will greatly facilitate the expulsion of the head. It may also be employed where the family object to the use of forceps. I have seen its good effects in a couple or three cases of primiparæ, where the pains had ceased, leaving the head pressing on the perineum. I have never seen good results from its employment in the first stage."

DR. REAMY.—"I thank the author of the paper for the care and industry which he has shown in its preparation. It is easier to see defects in an essay after it has been read than while writing it. There is certainly more to be praised than condemned in the paper to which we have listened. I think the essayist might properly have tried to show the increased uterine force caused by external pressure in the cases he has quoted from various authors. In some of the cases cited I think the rapid completion of labor was due to the external pressure. In certain cases the uterus can be stimulated into vigorous action by pressure, and when this can be done it is much better to employ it than ergot. When we come to think of it we will find that we all probably employ compression to increase uterine action. Can delivery be accelerated by pressure independent of the increased uterine power induced by such pressure? I fear that, in many cases, a natural presentation, as of the head, for example, might be converted into a face or some other abnormal presentation by compression. External pressure, when employed, should be used intelligently, otherwise harm may be accomplished. The method ought to be confined to cases in which delivery cannot be effected as well, or as safely, without compression, and to cases where the object is to excite uterine contractions. As has already been suggested, it is eminently proper in case of breech presentation, where the head is retained and delivery retarded. Here is its greatest advantage."

DR. TRUSH.—"I do not desire to criticise the paper itself, but merely the cases reported by the different authors, as quoted. I think these authors have given too much credit to the *direct pressure* and too little to the *uterine pains* induced

by the irritation. I do not share in Dr. Reamy's fears of changing the position of the child by external pressure."

DR. REAMY.—"I desire to add that the chief end of the employment of pressure is to increase the uterine contractions. If the mere pressure, independent of the uterine contractions, is great enough to force the child along in its course, then such an amount of pressure is likely to change its position. The secondary force of increased uterine contractions is principal; the other, that of *direct* force, is of far less value as an expulsive agent."

DR. McMECHAN.—"I have had no personal experience in using this agent before dilatation. I think it is advisable to try it in cases where morphine and other remedies have failed to relax the os. I think that if the necessary manipulation be quietly conducted, and in such a way as not to make too much of a display of the method, women will not be so averse to the proposed plan as some of the speakers fear. The plan is not applicable to cases other than those in which the head presents in an easy position, and breech presentations. I have seen a case with Dr. Reamy where it was very evident that the plan assisted very materially in delivery. I think it would be well for all the members of the Society to make careful observations on this subject, so as to develop enough reliable information to enable us to judge accurately of the value of external pressure in delivery."

Stated Meeting, Feb. 8, 1877.

DR. J. J. QUINN, *President, in the Chair.*

DR. CLEVELAND read the following history of

A CASE OF PREGNANCY WITH ELONGATED, HYPERTROPHIC,
AND ULCERATED CERVIX,

to which he added some observations on these conditions as affecting conception and pregnancy.

"The patient first came under my care in September last. She came for counsel on account of a distressing leucorrhœa and what she supposed to be uterine prolapse. The leucorrhœa was so profuse as to require a napkin. The uterus was found nearly in its normal position, perhaps slightly drawn down. The cervix was hypertrophied and elongated, the os resting upon the perineal floor. The sound penetrated five inches; this would leave the neck one and a half or two inches long. The cervix had on one or two occasions protruded from the vagina. The case was diagnosed to be endocervicitis, with hypertrophy

and elongation. The patient was lost sight of until December 20th, when I was sent for. I found the patient in pain, sitting on a chamber, bearing and suffering with vesical and rectal tenesmus. It was difficult to get her to leave her position and go to bed. A tumor was found protruding from the labia, was as large as a medium-sized apple; the appearance of the os readily determined the nature of it. It was so firmly constricted that it appeared strangulated; the surface of the tumor was as dry as the skin, except the os was moistened by a mucous discharge. Around the os, which was everted, there were ulcerated patches; the tumor could be circumscribed; it filled the vagina and punched out; the uterus was apparently enlarged. The patient had had diarrhoea and pregnant desire to micturate for six days previous to this; the tenesmus had only been very severe during the last 24 hours. The tumor had been coming down for a week or more, but she was able to reduce it until the last two days. The highly irritated and congested condition was attributed to the tenesmus, which was very excessive. A few days rest with opium suppositories served to reduce the irritation and congestion.

The patient claimed to be pregnant, although her menses had not appeared since the birth of her last child, which was then eighteen months old. That she was pregnant appeared highly improbable, judging from the condition of the cervix and the profuse leucorrhœa. Refrained from using the sound, and awaited the developments of time, quite certain that the patient's idea in regard to herself was incorrect. Saw the patient again on the 18th of January; found her walking about, abdomen enlarged, cervix had been drawn up into the pelvis; in a word, she was pregnant—the foetal heart was detected.

The case is narrated for the purpose of directing the attention of the Society to two points, impregnation under conditions that were very unfavorable to pregnancy, conditions that very frequently cause sterility. She failed to abort under conditions that were excessively aggravating, so much so that it would seem abortion must occur. The case illustrates what obstacles will sometimes be overcome in impregnation; so it shows the irritation that the gravid uterus will sometimes bear without giving up its contents."

DR. C. O. WRIGHT, opened the discussion as follows: "I do not rise for the purpose of discussing the paper just read, but as no doubt some of the gentlemen present may take the position that the condition of the cervix described in the paper is a main cause in the production of sterility, I give the following case, which the reading of the paper has called to my

mind, and which will, I think, assist the gentleman in maintaining the position he has assumed.

I have had a case under my care for a long time past, presenting the elongation and hypertrophy of the cervix, as referred to by the gentleman; in addition, there had been excessive ulceration; and once, when called to see her, found procidentia uteri; the body of the uterus being external to the vulva. Notwithstanding these facts, pregnancy occurred, and she went to the full term, without any special trouble; she has had two children since, making in all three children, and yet the elongation and hypertrophy exist. I should have stated that, in connection with her other troubles, she has occasional attacks of vicarious menstruation.

I present this case simply to corroborate the statement of the essayist, that pregnancy does occur, notwithstanding that hypertrophy and elongation of the cervix exist to such an extent that it would seem impossible for the spermatozoa to reach or penetrate near the fundus."

DR. THAD. A. REAMY remarked: "I have been much interested in the report of Dr. Cleveland. It is certainly unusual for conception to occur during the existence of such mechanical obstruction, as the changed condition of form and relation of parts, described in this case, imply.

It is also somewhat remarkable that, conception having occurred, abortion did not follow.

The vital changes associated with such conditions are well known to play as important a rôle in sterility as the mechanical impediments to the entrance, direct or indirect, of semen into the uterine cavity. So far as the mechanical question is concerned, the explanation may be in the presumption that in this case, during the act of coition, the male organ entered the cervical canal; at least to such extent as to permit the injection of semen into the same. This view has the more plausibility, since the os is described as being patulous.

I have myself professionally known of three instances where conception occurred during the existence of procidentia. In two of them viable children were delivered, in one case at term, in the other at a little over seven months. In the third case abortion occurred at the tenth week.

In one of these subjects the sexual act was always consummated by the male organ penetrating the uterine cervix; thus, so far as the sexual act was concerned, the cervix was substituted for the vagina. The uterus was, when I examined it, and as I was informed, had for years been, completely below the vulva. Its external coverings were now dry and deeply folded, having the appearance of common integument. The

os was patulous, the lips everted, but not eroded. Although I was informed that, for a year after the displacement became complete, there was, as usual in such cases, much tenderness, inflammation and erosion, probably ulceration.

In this case I obtained the concurrent testimony of both husband and wife, that congress was conducted in the uterus and not in the vagina. I was curious also to press a physiological inquiry, in answer to which I obtained conclusive testimony that the female, in this case, was by no means deprived of a fair amount of sexual gratification. Pregnancy had existed eight and a half weeks when she came under my charge. I returned the organ, after considerable difficulty, inserted a Meigs' ring pessary of large size, had the patient take the recumbent posture most of the time. The organ was thus retained in position until the seventeenth week of gestation, when the pessary was abandoned, the patient allowed to walk about her house as other women. She went to full term, and was delivered of a well-developed healthy male child.

In Dr. Cleveland's case it is clear that although pregnancy now exists, it did not exist at the time when he first examined and found the prolapsus, inflammation, and profuse leucorrhœa.

It is not likely that this discharge was furnished from the uterine cavity. It was either from the cervix or, very probably, from the vagina largely. The vaginal glands, under the friction of such cases, frequently pour out an abundant secretion.

I am convinced that, in a larger proportion of cases than we dream of, semen enters the cervical canal during congress.

I have known several instances in which, upon the testimony of intelligent and trustworthy parties, conception never occurred—except when special positions of the cohabiting parties were assumed. I know a man and wife, the parents of four children. At the time conception occurred, in each instance, the act was performed in the standing posture. Six years of fruitless married life had passed. This plan was adopted at the suggestion of an ignorant quack. After the birth of the first child, four years elapsed without further offspring. The same plan was resorted to and conception followed.

Such cases can only be explained on the hypothesis of a change of posture facilitating the direct entrance of the spermatozoa into the uterine cavity.

Inflammation of the cervical and vaginal mucous membrane is well known to be far more common than that of the body. It is quite common to find the most extensive disease absolutely limited by the os internum, the ovaries and uterus proper

remaining even for years in a perfectly normal condition so far as structure is concerned. Of course, by sympathy, there is often more or less change of function.

In such cases, if conception can occur, it is potent in the cure of the cervical disease. It can, under such circumstances, rarely occur, unless the spermatozoa can be thrown beyond the blighting influence of the vile discharge."

DR. CLEVELAND:—"I think my case has a tendency to prove that ovulation may occur without menstruation, since there had been no return of the catamenia since the birth of her last child. I desire some expression of opinion from the members of the Society as to how far hypertrophy and elongation of the cervix obviates pregnancy, since, in this example, the cervix was lengthened almost two inches, and lay upon the perineal floor. I had thought it almost impossible that the woman could become pregnant. I believed, too, that the existing leucorrhœa was sufficient in amount to wash out the seminal fluid. The neck was so elongated and thickened that it seemed almost impossible for the male organ to have entered it, the probability of which has been suggested by the last gentleman on the floor."

DR. REAMY: "Women with conical cervix are very likely to be sterile. Ovulation and menstruation are not invariably co-dependent. Indeed I may say, that in reference to this very point we know but very little with certainty. Many questions in connection with this subject are still undetermined. It has been proven that spermatozoa may live as long as six days in the cervical canal, and it is undoubtedly true that when conception follows intercourse it may not occur for hours or even days subsequent to the coition. It frequently requires this length of time for the spermatozoa of the male to reach the ovum of the female.

In reference to leucorrhœal discharges I will state that vaginal discharges are ordinarily more acrid than others.

But there is one condition to which I have not yet alluded, which, when it exists, is most generally followed by sterility. I refer to the tenacious discharge which sometimes is found to plug up almost completely the cervical canal, and which can be removed by mechanical means only, with the greatest difficulty. This condition is almost always associated with sterility."

DR. UNDERHILL: "Had I been in the position of Dr. Cleveland, I would have probably excluded pregnancy, as was done by him. But, possibly, I would not have been as cautious as he in the use of the sound. True, I have never passed the sound in a case where it was afterward found that pregnancy had at

the time existed, but my escape in this particular has resulted more from good fortune than from all other causes. Others very eminent in our department have (though rarely) been less fortunate, and with candor equal to their ability have admitted their mistakes, thus warning us of less experience of the great caution necessary to be observed in the use of the sound where there is the least ground for suspecting the existence of pregnancy. The abundant leucorrhœa which existed in the case related appears to be one point which induced Dr. Cleveland to doubt the existence of pregnancy. This discharge is indeed an occasional cause of sterility, but not so frequent as many others. If it be of a very strong acid reaction it may kill the spermatozoa of the male. So, too, if it be very strongly alkaline it may be fatal to them. And this calls up the question of relative sterility. For, a leucorrhœal discharge which may be sufficiently acrid to destroy the life of the zoöspirms of one male, may not be fatal to those of another male. The fecundating power of the spermatozoa depends, other things being equal, upon their vitality as manifested by their active powers of motion. Those of males in advanced life are not so vigorous as were those of the same persons in the prime of their manhood. Excessive sexual indulgence, habits of dissipation, ill-health, and many other causes will, as we all know, have a tendency to diminish the number and vitality of the spermatozoa. If such spermatozoa come in contact with a strongly acid or alkaline leucorrhœal discharge they will very probably perish.

The case under discussion also illustrates well, as has been stated by Dr. Cleveland, the excessive amount of irritation that the gravid uterus will sometimes tolerate without yielding up its contents. If I may be permitted, I will still further illustrate this point by reference to a case forcibly now presented to my mind. It is that of a woman to whom I was, a year or two ago, summoned. The bearer of the message was her husband, and on my way to his residence he informed me that his wife had been attempting to produce an abortion upon herself, but by what means he had not been apprised. I found the woman, a healthy-looking person, sitting in her chair, sobbing violently and almost overcome with terror at what she had done. In reply to my questions she informed me that she was three months advanced in pregnancy, and as her family was already as large as she and her husband could support, she had listened to the advice of wicked counselors and had attempted to produce a miscarriage upon herself by thrusting a knitting needle into the uterus. Abundant evidence of the truth of her statement was found in the large amount of blood

which she had lost, her clothing, and the carpet, for some distance around her chair, being thoroughly saturated with this fluid. She informed me that she had bent into a short hook the end of the needle that had been forced up into the womb, and that for the last four hours she had been making persistent and forcible efforts to extract it, but without avail. Upon examination I found one end of a long knitting needle dangling between her thighs. Taking this as my guide I passed my right hand into the vagina, the index finger following the needle into and along the cervical canal, clear into the uterus, the abundant hemorrhage which had occurred allowing this canal to be quite dilatable. Searching with the point of my finger for the hooked extremity of the needle, I found it imbedded deeply into the tissues just above the os internum. Of course she could not forcibly draw it out, and each attempt to do so only buried it more deeply into the tissues. With my left hand I pressed upward against the lower extremity of the needle, sufficiently to lift out and disengage the hook from its lodgment, then, with the end of my right index finger, I guarded the hooked extremity of the needle, and so withdrew it and my finger down along, and out of, the cervical canal. Of course I expected the woman would abort, because, even if the membranes had escaped rupture, I entertained no doubt that the inflammation set up by the lacerated and injured uterine tissues would prove sufficient to cause the womb to expel its contents. Accordingly, I left instructions to be summoned when threatening symptoms of abortion should be presented. To my surprise I heard nothing more from the case for six months, at the end of which time I was summoned to attend the woman in confinement. She gave birth to a healthy and well-formed child.

Thus do we learn that injuries, often quite violent in their nature, may be inflicted upon the gravid womb, and yet it refuse to yield up its contents. In this case no therapeutical treatment whatever was resorted to, and the result was certainly the opposite of what one familiar with the subject would have expected. And upon the other hand, it must be admitted that the most trivial causes sometimes effect an abortion. A predisposition to abort seems to exist in certain women, so that the most trivial cause will effect a miscarriage, and in others, in whom this predisposition does not exist, it appears almost impossible to compel an abortion.

DR. CARRICK: "I have listened with considerable interest to the case reported by Dr. Cleveland, and to the various theoretical views of the other members of this Society. And while I congratulate Dr. Cleveland, 'and more especially his patient,'

that *nature* so kindly stepped in and effected a cure, still we must recollect that such a fortunate result will only happen in *one* case out of a *thousand*, when the uterus is in such a condition and position as described.

How pregnancy took place under such circumstances is one of those *lusus naturæ* we occasionally hear of, but very seldom see. And as there has been so much pathological and theoretical discussion on that subject, I take the liberty to come down to the practical views of the case.

Should a patient consult me suffering from such an engorged and prolapsed uterus, I would immediately deplete by leeches, apply warm fomentations, and replace the uterus *in situ*, and retain it there with a pessary. This has been my usual mode of practice, with slight variations according to circumstances. About eighteen months ago a lady consulted me laboring under some such trouble as Dr. Cleveland's patient. I applied leeches, and used warm fomentations until the engorgement and enlargement had partly subsided. I then, with ease, replaced the uterus and retained it *in situ* with a rubber pessary. This lady became pregnant while wearing the pessary, went on to full term, and was delivered of a healthy child, and she now enjoys remarkably good health with very little prolapsus. I make these remarks in order to bring out the mode of treatment my professional brethren present are in the habit of adopting in such cases."

DR. A. J. MILES said: "I can indorse the treatment Dr. Carriek pursued in the case he has reported of hypertrophy of the cervix.

In answer to the question of treatment in this condition of the cervix, I will say that it will depend very much upon the condition of the part, the extent and duration of the disease. In hypertrophied cervix, due to displacement of the uterus, reposition is a prime factor in the treatment.

Where the hypertrophy is due to inflammatory engorgement, leeching, or depletion by Buttle's spear-pointed scarificator, followed by applications of cotton saturated with glycerine and tannin and copious vaginal injections of water conjoined with rest, may effect a cure. But in very chronic cases when the cervix is much indurated, when areolar hyperplasia exists, more heroic measures will be required, such as applications of the solid stick or a saturated solution of nitrate of silver, tincture of iodine or cantharidal blister, or, which is still better, the use of the stronger mineral acids for the purpose of establishing ulceration and thus set up retrogressive change in the part. For this purpose we may use chromic or nitric acid,

the acid nitrate of mercury, potassa fusa and potassa cum calce, or the actual cautery.

When there is hypertrophy with elongation of the cervix, or where the hypertrophy is very extensive, the most certain and radical treatment is to amputate the superabundant structure. Amputation can be safely and effectually performed by the galvano-cautery, scissors, or knife, and the cure will be more speedy and complete than by cauterization.

DR. J. J. QUINN (*In the chair*): "I would like to be informed by Dr. Reamy, or any other member of the Society, as to what good can be accomplished by amputation of the cervix in case of its elongation."

DR. REAMY: "I will state, in connection with this subject, that I have operated by amputating the cervix in twenty cases. I operate by the 'swallow-fork' method, using the scissors as recommended by Thomas, and leave sufficient mucous membrane on each side to cover over the edges, thereby securing a nice cicatrix. I have never but once seen troublesome hemorrhage from the operation, and have never in any case known occlusion to result. I have the notes of two cases operated upon by me in which pregnancy subsequently occurred. One of these was operated upon for the purpose of curing her barrenness. The other had not had a child for many years anterior to the time of the operation. No trouble occurred at the accouchement of either of these women from want of dilatation.

I like the plan suggested by Dr. Carrick, in reference to Dr. Cleveland's case, of lifting the uterus by a proper pessary. Many of these cases of elongated cervix cannot be satisfactorily nor successfully treated by absorbent applications, principally on account of the manner in which the cervix receives its blood supply. Hence the necessity for amputation of the neck which is sometimes forced upon us."

DR. A. J. MILES reported the following

CASE OF FIBROID TUMOR OF THE UTERUS REMOVED BY AVULSION.

"Nov. 20th, 1876, I was called to see Mrs. M., aged 35 years, who was suffering from uterine hemorrhage.

She had been delivered two weeks previously of a healthy child at term, since which time she had had constant hemorrhage. She was pale, almost pulseless, and so exhausted that she could not be raised up in bed without fainting. For two or three days previous to my visit she had had frequent paroxysms of pain resembling those of labor. On digital examination I found the uterus low down in the pelvis, and the os dilated

sufficient to admit one finger. The finger entered nearly one inch, came in contact with a tumor, which I feared at the time was the inverted fundus. With my other hand firmly pressed on the abdomen over the uterus I could feel the organ, the fundus of which was cupped-shape from partial inversion.

I then gradually pressed my finger higher up, passing over and around a tumor almost the size of a hen's egg, sessile, which was attached to the fundus.

I then gradually dilated the uterus with two fingers, after which I seized the tumor and with a twisting motion detached it.

Immediately after removing the tumor I reintroduced my finger and with very little effort returned the partially inverted uterus. The organ contracted firmly and there was no hemorrhage following. The patient made a good recovery.

The presence of the tumor had caused an irritation, and nature's efforts to expel the tumor had given rise to the paroxysms of pain from which the woman suffered. Had the case been allowed to go without treatment there would probably have resulted complete inversion of the uterus."

Stated Meeting, March 8, 1877.

The President, DR. J. J. QUINN, in the Chair.

UNDER the head of miscellaneous business the following amendment to the by-laws which had been proposed at the last meeting was now brought to the notice of the Society and adopted:

"Reports of cases shall be submitted in writing. But this amendment shall not be construed so as to prohibit the report of a case verbally, by way of argument, or during discussion."

After some further routine business, Dr. TRUSH read an elaborate paper on

RETENTION OF THE PLACENTA,

based on a case reported in connection with his paper.¹

At the conclusion of the reading of Dr. Trush's article the discussion thereupon was opened by

DR. MILES.—I have had no cases of retention of placenta following labor at full term—none, at least, that have given me any particular trouble. I have, however, had some cases of retained placenta following the expulsion of the fœtus before

¹ See Original Communications in this number.

the completion of the usual term, which have given me much anxiety.

DR. REAMY.—I cannot refrain from complimenting the author for the skill and industry he has displayed in the preparation of the paper just read. As to my own personal experience in the matter, I will say that I have had but one case of retained placenta in which I believe that absorption of that body took place. This was in a woman at the sixth month of uterogestation. The placenta was not delivered, nor was there at any time an offensive discharge. Three years subsequently this woman again became pregnant. In the instance to which I have referred there was no attempt at delivery of the placenta. There was no hemorrhage. Of course I had expected it to be expelled, but it was not, and there were no ill effects whatever observable.

Where absorption occurs in these cases the patient rarely dies, hence it seldom happens that we have a chance to ascertain the pathology. The changes occurring in the uterine tissue assist in preventing decomposition. The activity of the uterine circulation has a material influence in preventing the decay of the retained placenta, which is therefore left in a condition favorable for absorption.

Where there are morbid adhesions of the placenta there is very often a friable condition of the womb at the placental site. Hence the uterus is liable to rupture or break at this situation, and especial care, under such circumstances, is to be observed in removing the placental body. I desire to inquire of Dr. Trush whether, in the case reported by him, the placenta occupied the usual amount of surface.

DR. TRUSH.—The placenta was of the average size.

DR. REAMY.—The conduct of the uterus in the case reported by the essayist seemed to imply that there was a want of tone in that organ. It probably contracted imperfectly, and was partially paralyzed in its action. Its passive tonicity would also indicate the altered state of the womb which I have already suggested in reference to the friable condition at the placental disk. If I understand the essayist rightly, I do not agree with him as to septic poisoning *always* following retention of the placenta. As a rule septic poisoning *does* occur in these cases, but to this rule there are occasional exceptions. I have seen a case of a woman delivered of twins, one of the placentaë coming away promptly, the other being but partly removed, and the portion removed being torn away. I removed at least one-half of the latter placenta a week subsequently, and at this time there were no signs of blood-poisoning. In certain parts of the fragment decomposition had taken place, but in other

portions of it the circulation was still kept up. The patient recovered.

I am in the habit of making attempts at speedy delivery of the afterbirth; but sometimes we have cases in which it is not possible to find a loose point at which to begin the detachment, and in these cases I would resort to other means prior to attempting removal by the hand. By no means would I make traction upon the cord. Usually the placenta is detached by being rolled up and expelled one end foremost. In Dr. Trush's case, the head, by its pressure, may have induced inflammatory action, which caused the morbid adhesions. I recollect having once seen a case in which the dead foetus at the sixth month, and the afterbirth also, had both been retained. I dilated the cervical canal and removed them. In Dr. Trush's case, I think, the placenta would have been expelled had external pressure been employed for that object.

DR. C. O. WRIGHT.—The queries as to what conditions promote absorption of the retained placenta, and why it is absorbed in one case and not in another, are difficult of solution, and have not yet been satisfactorily answered. I once attended a woman, thirty-seven years of age, in her second confinement, and, having waited one and a half hours for the afterbirth to come away, I ventured to make very slight traction upon the cord. Immediately the womb dropped into the true pelvis. Letting up on the traction the uterus returned to the position it had occupied before I had drawn upon the cord. I however succeeded in delivering the larger portion of the placenta; perhaps one-third of it was retained. There being no hemorrhage of consequence I left it there. Ten hours subsequently I found but little change. The uterus would contract upon manipulation. Still, ten hours later, hemorrhage occurred, but it soon ceased. On the second day quite a profuse hemorrhage occurred, when I succeeded in removing the part of the placenta which had been left. Yet this patient suffered seriously from septic poisoning. Why? And why, from the retention of a small portion of the placenta, do we often have septicaemia of a grave character, while when the whole placenta is retained there is often no septic poisoning whatever?

DR. QUINN called Vice-President Miles to the chair, and in referring to his own professional career said:

I have recently had but little experience with retained placenta. Formerly, when I followed more closely the directions of the text-books, *i. e.*, to wait, I had much more difficulty of this kind. I well recollect one case, in which, the woman having been delivered naturally, I waited some time for the placenta to be expelled. Suddenly the woman cried out with pain, when,

upon hastily introducing my hand, I was just in time to prevent the completion of an hour-glass contraction which had already partially taken place. I have of late years always proceeded to deliver the afterbirth at once. I use some traction upon the cord, but always carefully, cautiously, and conjoined with external manipulations, employing pressure for the purpose of exciting uterine contractions, and thereby hastening the delivery of the placenta. If the afterbirth is not in this way delivered quite speedily, I am in the habit then of introducing the hand and assist the expulsion.

I desire to illustrate my views a little more fully by reference to a forceps case to which I was called in consultation only last week. After the instrumental delivery, upon attempting to remove the placenta, it was found that the cord would not hold together if the slightest traction was made upon it. One-half the afterbirth remained in the uterus, and had it not been very speedily delivered, threatened to become retained. The hand was introduced, and delivery of the retained portion at once accomplished. I think that sloughing of the retained placenta is seldom attended by septicæmia. Septic poisoning is, in such cases, according to *my* experience, the exception, and not the rule.

I have seen at least three cases of putridity of the retained child and placenta. In the first of these the child died at the sixth month of pregnancy, but was carried till the completion of the ninth month. The child seemed to have died from strangulation by the cord. The second was a case of self-attempted abortion, and though the woman succeeded in causing the death of the child in utero, yet she failed in her object of causing its expulsion from the womb. The foetus was carried to the close of the usual term, and at birth both child and placenta were a mass of putrefaction. The third was a case in which the foetus perished about two months before its delivery, and evidences of syphilis were found. Placenta and child were both decomposed, the delivery taking place at the ninth month. That woman subsequently was delivered of a living and apparently healthy child. Now, there were no septicæmic symptoms in any of these three cases.

I contend that by the early removal of the placenta we will almost always obviate that condition, which would otherwise in many instances result in its retention. I do not mean, however, to arraign Dr. Trush for not having secured the removal of the whole afterbirth in the case related in his paper. I do not see how he could have done better in the management of that case.

DR. McMECHAN.—In case of retained placenta I would not

hesitate to introduce the hand, and by it attempt to get away the placenta or any portion of it that may have been retained. If such means failed I would give ergot. But I would not give ergot first, because the remedy would probably produce such contractions of the womb as to effectually prevent the introduction of the hand. I think it would have been better had the author of the paper given to his patient an anæsthetic, when such relaxation of the uterus would probably have occurred as would have permitted him to get away by his hand the retained parts of the placenta.

I will here narrate the case of a colored woman, a patient of mine—and I give the case more for the purpose of showing that ergot exercises a powerful effect in the animal economy than for any other object. While she was near the close of the second stage of labor I gave her one-half ounce of the fluid extract of ergot. The pains almost immediately grew much stronger, and in a short time I gave her another half ounce of the same preparation. Ten minutes subsequent to the second dose the child was expelled. Then there followed hour-glass contraction from the vigorous contractions induced by the ergot which had been so freely administered, and of course there was difficulty, or rather impossibility, of immediate delivery of the afterbirth; I then gave morphine freely, and, as the uterine contractions did not remit in a few hours, I put the patient under chloroform, and, without great difficulty, succeeded in getting away the placenta.

DR. REAMY.—I desire to express my dissent from the recommendations of Dr. Quinn, relating to traction upon the cord. I would make no traction whatever. As to my own course, I never *wait* for the delivery of the placenta. I exercise all the usual precautions against retention of this body, and have always an assistant to make pressure at the proper time and in the proper way over the uterus, so as to excite the necessary contractions. The placenta is generally detached with the last pain. I would make no traction at all upon the cord, except to straiten it and use it as a guide for the hand. Should the afterbirth be morbidly adherent, and should strong traction be made upon the cord, there is great danger of producing inversion of the womb. Or, in such case, while the placenta might by this traction be detached in the centre, it would also be liable to still remain attached at the edges. In either case the result would be fraught with danger to the woman.

DR. QUINN.—It is proper that I should explain that when I spoke of making traction upon the cord, I, of course, did not mean that so much force should be used as to threaten the pro-

duction of the serious results named by my friend Dr. Reamy. I still think that a proper amount of traction upon the cord, made judiciously, and with a full knowledge of the evils that may result from too great force applied in this way—I say that I still think such traction would greatly facilitate the prompt and safe delivery of the placenta.

DR. TRUSH.—Before this subject is dismissed I desire to say that I do not wish to be understood as claiming that septic poisoning *necessarily* follows retention of the placenta. That is only one of the terminations which may occur.

In reply to Dr. C. O. Wright's inquiry, why septicæmia took place in the case related by that gentleman, I would state that, since the placenta, or rather a portion of it, had lain in the uterus till the second day, decomposition had already set in. A fresh wound or lesion was made by the removal of the decomposing portion, thence through that lesion septic matter was absorbed, and septicæmia consequently developed.

In regard to the remark made by Dr. McMechan, that I ought to have administered narcotics instead of ergot, I have only to add that, in my judgment, no indication for the employment of such remedies presented itself during the entire progress of the case. There was at all times during its continuance a want of uterine action; even when hour-glass contraction was encountered, no serious difficulty was experienced in dilating and passing the constricted points. Why, then, under such circumstances, employ narcotics?

Stated Meeting, April 12, 1877.

The President, DR. J. J. QUINN, in the Chair.

DR. C. O. WRIGHT read the following paper on

STOMATITIS MATERNA.

“I do not know whether, in this short paper, I shall present for your consideration anything new or original; but having had during the past year one or two cases that have been extremely intractable to treatment, I have thought proper to present some facts in regard to them, hoping thereby to induce some discussion that may prove of interest in a practical sense. I find very little upon the literature of the subject, hence the imperfect manner of presenting it.

“*Stomatitis materna*, or nursing sore mouth, is an inflammation of the mouth, of varying degrees of intensity, peculiar to

the puerperal woman, and, so far as my experience and observation extend, occurs only while suckling.

"Our attention is generally called to the perversion of taste, described by some as resembling that of eating green persimmons, whenever taking anything warm in the mouth, and the great difficulty of taking even mild liquids. Upon examination, the tongue is found inflamed and swollen and often blistered; the blisters bursting, leaving abraded surfaces; the inflammation often being very rapid and involving the gums and cheeks; the surface of the tongue is red; papillæ not elevated. In some cases the mouth is dry, while in others profuse salivation occurs. The inflammation sometimes involves the entire mucous tract, and leads to extensive ulceration. It often produces severe and obstinate diarrhœa, with severe gripings and colicky pains.

"Byford classifies this disease into three varieties: first, a simple variety, which has a superficial and diffuse inflammation of the mucous membrane, with but little, if any swelling, transient in character, subsiding in a few hours or days.

"In the second variety, we have, in addition to the inflammation, a crop of vesicles.

"In the third variety the fissured, ulcerated condition of the tongue. He describes the first two varieties as migratory, travelling down the whole intestinal tract, and, indeed, may involve any of the mucous tracts.

"This is the history and description of the disease, so far as we can gather from the scanty literature of the subject. Is this an aphthous sore mouth, as some physicians have claimed? Do we have the 'increased production of epithelium; the growth of the fungus; the abundant epithelial scales, producing the thick white layer, found upon the tongue, and other portions of the mouth and throat,' that we have in aphtha? So far as my observation extends, I answer in the negative. What is the condition of the system, producing this disease? and why does it manifest itself upon the mucous membrane? are queries that I must confess I am not able to solve, and I hope some of the gentlemen present may give us some light upon these questions.

"In the cases I have had, severe lactation produced a condition, not of anæmia, but a weakened, debilitated condition. Confinement to the house and change of diet altered, I am satisfied, the normal condition of the blood; and as to its character I do not think it could possibly be ascertained.

"There was, to my mind, a scorbutic taint, based upon this deduction. Prior to confinement my patients had been accustomed to eat freely of pickles and to use acid foods—afterwards abstaining entirely from them; hence, reasoning from this, and

not being able to assign any other cause, I take the position of the scorbutic cause.

"In the one case, third child (no trouble in previous nursing), the nervous system was greatly disturbed by eczema of the nipples, followed by enlargement, and then severe and extensive fissuring, scarcely yielding to treatment. After a month nursing sore mouth set in, and what was singular to me was the apparent sympathy existing between the nipple and the stomach; as one would improve the other would do likewise, and *vice versa*. Can any deduction be drawn from nervous action in producing stomatitis materna? In this case I finally placed the patient upon iodide potassium and full doses of cod-liver oil, and, taking advantage of slight amelioration in the symptoms, requested her to try and eat kroust and slaw with vinegar on them, which she did, with, I am satisfied, decided benefit, for the improvement was more marked after this than previously, although there was still considerable diarrhoea present. Duration of case up to this time ten weeks.

"In the other case we had the exquisite sensibility of the nipples with the sore mouth. Instead of the dry condition of mouth we had most severe salivation. A towel held to the mouth at night would be almost saturated by morning. This case resisted all treatment, and the child had to be taken away from her. She gradually improved in health, but more rapidly, it seemed to me, after she could eat of sour food.

"Hoping some of you will be able to throw some light upon the points raised in this paper, and the influence acid food has upon the economy in these cases, I submit the paper to you."

The brief discussion which followed was participated in by Drs. Cleveland, Quinn, Palmer, Miles, Reamy, and Trush.

DR. J. L. CLEVELAND.—I have never treated a well-defined case of materna stomatitis, and consequently have had no experience with the malady. I am, however, led to infer that probably the trouble in one of the cases referred to in the paper was eczematous, since the nipples were affected in that case with eczema. It is not impossible, too, that there may have been a scorbutic taint, as suggested by the essayist.

DR. C. D. PALMER.—I have seen several cases of stomatitis materna in pregnant, puerperal, and nursing women. A recent case that came under my notice began with diarrhoea in the early months of pregnancy and was followed by sore mouth. She gave birth to a seven-month child and died not long afterward from pulmonary tuberculosis. I believe the affection to be a manifestation of a constitutional vice, probably a morbid and impoverished state of the blood. I depend principally upon constitutional treatment, giving the patient

compound syrup of the triple phosphates, and other general treatment.

DR. A. J. MILES.—The most marked case of the disorder under consideration which has ever come under my care was that of a woman who was suffering also from pelvic cellulitis. In this case the stomatitis was exceedingly troublesome, and it became imperative that the child should be taken from the breast. Improvement did not take place till this course was adopted.

I have also seen something very similar to, if not identical with, this affection in nulliparous females *during their menstrual periods*.

DR. QUINN.—I recollect at present of only three cases of sore mouth during lactation. One of these was constitutional, and I regarded it at the time as scorbutic in character. The others were unattended with any constitutional disturbance of either the bowels or circulation, and were treated locally with satisfactory results.

DR. REAMY.—I think this is a subject, gentlemen, which has not yet been sufficiently investigated. I believe, too, that the state of the blood has much to do with the disease, though the nervous system is likewise especially implicated. It is reasonable to suspect that causes which give rise to eczema would also produce nursing sore mouth, and I believe, in short, that nursing sore mouth is eczematous. As it depends principally upon error of the nervous system, I hold that constitutional treatment is most important—local measures being secondary.

DR. TRUSH.—I must be excused for objecting to the conclusions of Dr. Reamy to the effect that nursing sore mouth is eczematous. I think it is not, because materna stomatitis is an ulcerative process, and eczema is not.

DR. REAMY.—I have, upon personal observation in this affection, found that after the vesicle is ruptured a fissure presents. I have frequently observed a fissure in the abraded surface, and I think this is a farther analogy between eczema and materna stomatitis.

At the close of the discussion of this topic

DR. THAD. A. REAMY reported the following case of

IMPACTED FACE PRESENTATION.

Six weeks ago I saw, in consultation, Mrs. W., of this city. She was in her third confinement; had been in labor thirty hours. She was attended for twenty hours after labor commenced by a midwife, who reported the pains during past three hours quite vigorous.

At this stage Dr. K. was called. He found a face presentation, first position, or mento-posterior right. The face had partially entered the upper pelvic cavity. The membranes had been ruptured by the midwife, and the amniotic fluid drained off. The pains were vigorous, but progress was slow. The Doctor applied the forceps.

Much difficulty was encountered in locking the instruments, and when firm traction was made they slipped off, the accident occurring several times. Attempts were also made to elevate the chin and bring down the forehead, thus converting it to a vertex presentation. Dr. W. was now called. Further attempts at change of position and delivery were made, but without avail. By request of the medical gentlemen in attendance, I was sent for.

Thorough impaction now existed; the chin on a line with the right sacro-iliac synchondrosis had descended toward the pelvic floor; the frontal bone wedged down against the ischio-pubic ramus, left side, the anterior or superior border of the occiput against the left pubis. So complete was the imprisonment, that all attempts to move the presenting parts in any direction whatever were utterly useless.

The child was dead, and had been several hours. After consultation, craniotomy was decided upon. Had the child been alive, this dire resort would probably have been inevitable under all the circumstances; it being dead, and leaving no interests but the mother's to consider, of course the decision was easy and prompt.

The Cæsarean section was the only other means left for delivery.

I perforated through the frontal bone, and delivered by craniotomy forceps, without special difficulty. The child was large, neck short.

The obstetrical forceps which had been used in this case were the variety known as Busch, very heavy blades with exaggerated pelvic curve. Very considerable contusion of the anterior vaginal wall and of the left labium occurred during the slipping of the forceps already referred to, and I doubt not the accidents were due largely to these unfortunate qualities of the instruments, as the gentlemen who employed them are physicians of skill.

Three days after delivery I was requested to see this woman again with Drs. K. and W., who had been in joint attendance. The following history was obtained: On the morning of the second day after delivery the patient experienced a pronounced chill, followed by high pulse and temperature; another chill,

not so severe, however, followed in six hours. There was great thirst and considerable abdominal pain.

When I saw the case, about twenty-four hours after the occurrence of the first chill, the countenance was anxious and dull, the abdomen was enormously distended; pulse 140, temperature 104° . Severe pain was complained of in lower abdomen. There was no vomiting; lochia rather scanty; not especially offensive; urine scanty, pretty high colored.

Prognosis, *grave in extreme*. The patient was getting opium, one grain every three to four hours; quin. sul., two grains every three to four hours.

Upon consultation, she was now ordered opium, one grain every hour; quin. sul., 25 grains, to be repeated in eight hours till three portions were administered, then the doses to be repeated every 12 hours. Turpentine stupes to abdomen; to have copious vaginal injections, carbolic acid 1 part to 100 of water; the injection to be thorough, and repeated every two hours.

Results: Within ten hours, temperature had fallen to 101° ; pulse to 110. The abdominal pain and tympanitis rapidly subsided.

The opium was continued as above until ten grains were exhibited; semi-narcotism supervening, two to four hours elapsed between doses, and as the case progressed toward a cure the quantity diminished, and time between doses extended. The quantity of quinine was reduced by the same rules.

Within twenty-four hours after this treatment was commenced the pulse was reduced to 97, the temperature to 99° . The patient made a good recovery.

This case presents at least two aspects of interest and profit.

1st. It pretty well illustrates the impropriety of the early application of the forceps, at least for purposes of traction in face presentation. Such traction can only add to the impaction when the presenting part has entered the brim, and by it normal rotation and extension are prevented. Thus, in a case of mento-posterior position face presentation, forward rotation of the chin is almost inevitably rendered impossible.

2d. The case illustrates that important results may sometimes be attained by the heroic use of proper remedies, even in apparently desperate emergencies. When I saw this woman the first time after delivery, I thought, as did both of the gentlemen in attendance, that an unfavorable termination was almost inevitable, and yet I never witnessed a more prompt surrender to the influence of remedies.

I am unable to state which remedy was most important;

this is no marvel, for I am not positive what lesion predominated. The symptoms pointed to septicæmia and to peritonitis. Close relations between these conditions and the traumatism already described were recognized as probable. I am inclined to think that no remedy employed was more important than the abundant antiseptic injections. I am convinced that often when we order vaginal injections in puerperal cases, the quantity of fluid employed is so small, and the manner of using it so imperfect, that no good whatever results.

Opium, as is well known, has more power over peritonitis than any other agent, but to exert that power it must be given, for effect, regardless of quantity. Quinia, in full doses, was indicated, if from no other quarter, by the high range of temperature. In this case I was anxious to court its power over migration of the white corpuscles also.

DR. PALMER.—The case just reported and commented upon by Dr. Reamy is certainly a very interesting one. It does not follow that the early use of the forceps induced impaction of the head with a posterior rotation of the chin.

If the chin impinges first upon the posterior inclined plane of the pelvis, that is, posterior to three-fourths of an inch anterior to the sacro-iliac synchondrosis, a posterior rotation of it would be natural, and only in conformity with the laws of mechanism of labor so ably presented by Hodge. This is the inevitable result under these circumstances with average head and pelvis. It is *possible* for delivery to be effected then under great distention of the perinæum, or from very great flexion of the head. But as a rule, artificial means, viz.: the hand or forceps to secure rotation, or later, craniotomy, would be required. Anterior rotation of the chin of course occurs spontaneously when the chin strikes the anterior inclined plane, although it looks more or less backwardly. This distinction has often not been made. The term mento-posterior is then, frequently, a misnomer.

DR. McMECHAN.—I cannot agree with Dr. Palmer, if I understand him properly, to the effect that the presentation in these cases cannot be changed. For I have myself effected such change, pushing the head above the brim and then flexing it. This was in a case where I had first applied the forceps and failed in accomplishing delivery by them.

DR. PALMER.—This may all be perfectly true. But I did not mean to refer to those cases where the head could be lifted above the brim and rectification of position is produced, but to the course or mechanism of cases in descent left to nature.

DR. CLEVELAND.—I certainly consider the case of Dr. Reamy as a very grave one. While he was reading the report of it I

did not expect to hear of so favorable a termination. I have no doubt that the symptoms which supervened subsequent to delivery were septic in character, and that the blood-poisoning was subdued in its incipency.

DR. QUINN.—In connection with this subject I desire to make brief reference to a case of face presentation which I once saw in consultation with Dr. H. It was mento-anterior. The child was extracted by means of a hook fastened in the month. The patient died.

DR. REAMY.—I did not say that the face presentation was, in this case, caused by the forceps. On the contrary, this presentation was recognized before their application.

In this case there was ample pelvic capacity. It will be remembered face presentation, first or second position, is premature extension on the transverse axis. A threatened face presentation is often rectified to a normal vertex by the natural powers. Forward rotation of the chin by the natural powers is the usual mode of delivery in such cases when uninterfered with. Traction by the forceps usually prevents either of these desirable results, thus converting a comparatively safe case, safe both to mother and child, into one of great danger to both.

I think it often a delicate and difficult matter to determine whether or not to attempt interference with a view to converting a face to a vertex presentation by elevating the chin and bringing down the forehead. It can occasionally be done, but will much oftener fail than succeed; and when it does fail it generally defeats the very plan by which nature converts a mento-posterior into a mento-anterior position, by gliding the forehead upward and afterwards backward upon the anterior lateral inclined plane, at the same time, of course, the chin being greatly depressed and gliding forward often upon the floor of the pelvis.

Attempts at forward rotation by the forceps in mento-posterior positions are also generally failures, except in those of great pelvic amplitude. It occasionally can be done. I have myself succeeded in a few instances, and all authorities commend the effort in certain cases; but I am thoroughly convinced that the natural powers here can work better unaided.

My colleague, Dr. Palmer, is, I think, mistaken in his statement that spontaneous forward rotation cannot occur when the chin enters the brim on a line not more than three-fourths of an inch anterior to the sacro-iliac synchondrosis. Most modern authorities agree that spontaneous forward rotation occurs as the general rule, and often after the chin has descended to the pelvic floor; indeed, it cannot be too well understood that the lower the chin has descended in contrast with the forehead, the

more certainly forward rotation may be looked for. Within the past two months I saw a case in consultation with my assistant, Dr. William H. Minnich, in which forward rotation occurred spontaneously; this process had not commenced until the chin actually pressed the perinæum. It passed to the perinæum immediately on a line with the sacro-iliac junction.

It takes a little time and patience, but that obstetrician who can best command these qualities will best succeed in these cases. I am aware that in all this I announce no new doctrine; but it may be none the less profitable that I bring my clinical experience to bear upon a point which, though not much in dispute among modern writers on obstetrics, yet upon which practitioners of large experience differ widely, in practice at least, whether in theory or not.

Of course, I do not here discuss the question of podalic version, a procedure well known to be the safest way out of some of these cases, both to mother and child.

ABSTRACT OF THE TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY.

SECOND ANNUAL MEETING.

HELD IN THE CITY OF BOSTON, MAY 30TH, 31ST, AND JUNE 1ST, 1877.

First Day—Morning Session.

THE Society met, pursuant to adjournment, at the Hall of the Boston Society of Natural History, at 10 o'clock A.M., May 30, 1877.

The President, DR. FORDYCE BARKER, of New York, called the meeting to order.

There were present Drs. Barker, Noeggerath, and Lusk, of New York; Byrne and Skene, of Brooklyn; Atlee, Smith, and Goodell, of Philadelphia; Wilson, of Baltimore; Byford, of Chicago; Battey, of Rome, Ga.; Engelmann, of St. Louis; and Storer, Bixby, Richardson, and Chadwick, of Boston.

DR. D. H. STORER, of Boston, extended a hearty welcome to the members and invited guests of the Society.

The following gentlemen were elected members by invitation:

Drs. O. W. Holmes, J. P. Reynolds, F. Minot; C. Ellis, of Boston; G. Kimball, of Lowell; B. E. Cotting, of Roxbury; E. H. Trenholme, of Montreal; J. C. Dalton, of New York; J. Scott, of San Francisco; T. M. Reamy, of Cincinnati, and H. J. Garrigues, of Brooklyn.

The facilities of the medical library were tendered to the members and invited guests by the Secretary.

The first paper was read by the Secretary, DR. JAMES R. CHADWICK, of Boston, on

A NEW THEORY AS TO THE FUNCTION OF THE THIRD SPHINCTER ANI, SO CALLED.

The sphincter consists of a thick bundle of muscular fibres encircling the rectum three or four inches above the anus. It was illustrated by Browner's plates, made from frozen sections. It is not correctly represented in anatomical plates. It is often only faintly indicated, and sometimes entirely absent, but usually well marked. It is not a distinct circular layer, but consists of two half-circles. Their physiological function is to contract together, although anatomically they appear separately. The opening through this band of muscular fibres is usually sufficiently large to admit two fingers, and although its course is spiral, it is called annular. The diameter of the opening through it would barely admit of the conclusion that its formation was that of a sphincter.

Dr. Chadwick believed that the function of this third sphincter, so called, was to further the progress of the fæces, instead of retarding it; that its function was expulsive, such as belonged to the ordinary circular fibres of the intestine. He had arrived at such conclusions by experiments performed upon the living human subject, from the study of specimens and plates.

The second paper was read by DR. JOHN BYRNE, of Brooklyn, on

EXCISION OF THE CERVIX UTERI: ITS INDICATIONS AND METHODS.

After giving a history of the operation, Dr. Byrne passed to the consideration, first, of the diseases and otherwise abnormal conditions of the uterus which called for it, entire or partial; second, of the manner of the operation, and by what means in order to insure the greatest degree of success. The diseases and conditions calling for the operation were considered chiefly

under the same heads given by Dr. Thomas in his work on diseases of women.

The means of operating at the present time were the knife, the *écraseur*, and the galvano-cautery. He was disposed to believe that the dangers attending the use of the knife had been rather over estimated. The *écraseur* was seldom resorted to at the present time. The avoidance of hemorrhage was the only advantage it possessed over the scissors or the knife. There were certain objections to its use: 1. It had been found not to be always a reliable safeguard against hemorrhage; 2. There was great danger of opening into the peritoneum when the cervix was to be removed close to the vaginal junction; 3. There was necessarily more danger from septicaemia; 4. It was a bungling, unscientific, and unsurgical mode of procedure.

The galvano-cautery was then considered as a means for the removal of the cervix, and its advantages pointed out in the light of eight years' experience, and removal of the cervix, wholly or partially, in 100 cases.

With regard to the occurrence of hemorrhage after the use of the galvano-cautery, Dr. Byrne believed it to be due to the fact that the wire was used too hot, and not sufficient time taken in the removal of the part.

With reference to cicatricial contraction following the operation, Dr. Byrne was of the opinion that such condition was rarely observed, and that it never occurred as a direct consequence of amputation of the cervix with the electro-cautery; that such condition was less likely to follow than when the operation was performed by any other method; and that even if cicatricial contraction were constant, the method of removal of the cervix by means of the galvano-cautery was to be preferred to all others.

In malignant disease, he was disposed to believe that if the hot wire was passed through a little below the line of demarcation, a radical cure might be expected if the stump was properly cauterized. The effect of the hot wire upon the tissues extended beyond the line of application. The galvano-cautery was believed to be infinitely safer, and by far the most thorough and radical in its curative tendency in the treatment of cancerous disease of the uterus, of any means that could be employed.

DR. W. GOODELL, of Philadelphia, remarked that he had listened with great pleasure to the admirable paper, and that he was disposed to agree with Dr. Byrne in most of his propositions and most of his conclusions. He had performed excision of the cervix uteri by different methods over twenty times, and

his preference was most decidedly in favor of the use of the galvano-cautery. He also agreed with the Doctor in reference to the indications for amputation of the cervix. His experience, however, regarding the innocuousness of the hot wire was not so favorable as Dr. Byrne's, the immediate results not having been so good. He was not prepared with statistics, but the only fatal cases which he had had, had occurred after the use of the battery. One case died from furious peritonitis, and a second case from secondary hemorrhage occurring on the twenty-first day. In the latter case, however, the hemorrhage could scarcely be attributed to the operation, for the patient was eighty years of age, and the hemorrhage was probably due to atheromatous condition of the blood-vessels. In a third case death occurred in consequence of secondary hemorrhage. Dr. Goodell further remarked, in regard to occlusion of the cervix, that he had never seen it occur after excision had been performed by means of the galvano-cautery or the *écraseur*. He had seen occlusion occur after the use of a sponge-tent employed in the removal of a polypus, and also after the use of the nitrate of silver in one instance, but never after the use of the means above mentioned. With reference to the time for the removal of the cervix, he agreed with Dr. Byrne. It should be removed, even though only partial removal could be effected.

We might not be able to completely remove the disease, but with the removal of the diseased bleeding cervix we relieve the patient from very many distressing symptoms. Dr. Goodell also believed that the term cancerous cachexia was a misnomer, and one calculated to deceive the practitioner. That leaden countenance and peculiar complexion, which had been regarded as characteristic of malignant disease, was not infrequently absent; a woman having all the outward tokens of good health might at the same time be the subject of cancer. Even when the cachectic look was present, it was not the cancer, if present, that had induced it; for, after scraping the cervix or removing it, that peculiar complexion had disappeared under after-treatment. He was therefore disposed to think that the cachexia was not due so much to the cancerous disease itself, as to the local irritation produced by a localized wound. The cachexia by no means contraindicated the operation, neither did fixity of the womb contraindicate the operation. We could not tell, from the mere fact of the womb being fixed, whether the malignant disease had passed beyond the cervix or not. The fixity might have been produced by peri-uterine inflammation, not necessarily dependent on the disease of the cervix. He had often in those cases removed as much as possible of the cancerous struc-

ture by the use of the hot or cold wire, or by scraping the surface, and had seen excellent results.

In only one instance had the operation for the removal of the cervix been rewarded by a cure, and in that case the operation was performed before the disease had invaded the body of the womb.

There was another reason why the cold wire was less liable perhaps to be attended with secondary hemorrhage: the surgeon could, after using the cold wire, stitch the mucous membrane over the stump, and have union take place in such a manner that the pressure would prevent secondary hemorrhage; whereas, when the hot wire was used, the part was placed in such a condition as to render it impossible to stitch the edges of the mucous membrane together.

For that reason he was disposed to think that the cold wire was less liable to be followed by secondary hemorrhage than the hot wire.

REPORT ON THE CORPUS LUTEUM.

DR. JOHN C. DALTON, of New York, in compliance with a request made by the Society at its last meeting, made a report on the corpus luteum, which embraced observations made upon 32 sets of specimens. In all but two the date of the last menstruation was known with a remarkable degree of precision. Of course many of them were cases in which menstruation had been suspended several weeks or months, from various causes; but they were of interest from that very fact, and there were but few, if any, which did not in some way prove of value for purposes of report.

There were eight cases of death in non-pregnant women within four weeks of a regular menstrual interval; six cases in which menstruation had been absent from five to eleven weeks; six where menstruation had been absent for four months together; two in which menstruation had been absent six months and over; four cases of abortion; six cases from one to eight days after delivery at full term. That constituted the material of the report.

Dr. Dalton divided his report into two parts: First, the study of the corpus luteum of menstruation; and second, the study of the corpus luteum of pregnancy. A minute account of the changes found in the ovaries in two or three cases was given as illustrations of the series embraced in the report. Drawings were exhibited illustrating different corpora lutei under various circumstances, the date being given in days after menstruation, at which death took place. It was desirable to know the date at which the termination of menstruation took place,

also its commencement, and the last menstrual epoch; but that had been difficult to determine, especially when sudden death had occurred in a healthy person. The drawings illustrated the changes which were found from two to twenty days respectively after the occurrence of the menstrual period. There was one drawing illustrating the condition present at the time the woman was menstruating, death occurring suddenly as the result of poisoning.

The first ten cases of the series illustrated the normal condition and the retrogression of the corpus luteum as connected with menstruation, as it was found in women in whom menstruation occurred regularly. In one case the corpus luteum was examined twenty days after the termination of the last menstrual epoch, the ovary being removed from a woman while living. In that case there was a complete history of the corpus luteum in connection with menstruation, and from that case the fact that there was a ruptured Graafian follicle, and the formation of a corpus luteum, would seem to prove that there was some direct connection between its formation and the function of menstruation. The central clot was brownish the more recent the period of menstruation, and the more remote the period the less of the red color of a fresh coagulum. Another point was with reference to the rapid growth of the corpus luteum. If the body of a healthy woman was opened, in whom the menstrual epoch has returned with regularity, there would always be found in one of the ovaries one corpus luteum which preponderated in size and importance over all the others. If the body of a woman was opened in which menstruation had not returned with regularity, such corpus luteum was not found; others were found unless menstruation had been arrested for some time. The changes which occurred in the clot and the wall of the corpus luteum were then described, and at the end of ten weeks it was found that the red color had disappeared, and the color of the wall had become very decidedly yellow.

Several corpora lutei were found in women who menstruated regularly; in one case seven were present. The more frequent the occurrence of the menstrual epoch, probably the more frequent the formation of the corpus luteum, and the greater the number present.

With reference to the size of the corpus luteum, it was estimated, first, by weight, and second, by volume. The weight increased to a certain point and then diminished, and diminished very rapidly. Undoubtedly the size and weight of the ovaries varied in different individuals, and within physiological limits; the right and left also varied in weight, consequently we could not expect to find an invariable standard size for the corpus

luteum as connected with the period of menstruation. The following weights were given as found in the cases which had come under observation :

WEIGHT OF CORPUS LUTEUM IN MILLIGRAMMES.

2	days after menstruation.....	380
9	" " "	430
10	" " "	810
15 to 20	" " "	1,230
20	" " "	1,200
6 weeks	" " "	90
10	" " " "	20
11	" " " "	15

The next six cases illustrated the condition present in the ovaries when menstruation had ceased for several months or a year. With the arrest of menstruation the functions of the ovaries ceased and the rupture of a Graafian follicle and formation of corpus luteum came to an end. The ovaries might be reduced to one-fourth or one-fifth their average size.

Menstruation occurring with regularity, we had the formation of the corpus luteum ; menstruation having ceased, the corpus luteum was no longer developed.

The next cases illustrated certain irregularities: *First*, menstruation without ovulation. *Second*, formation of corpus luteum without central clot. *Third*, hemorrhage into or around the Graafian follicle without formation of corpus luteum. *Fourth*, blackish discoloration in and about corpus luteum, instead of disappearance of color ; it was not very unusual. *Fifth*, gelatinous and fibrinous exudation from the morbid causes into the interior of Graafian follicles, producing solid tumors. *Sixth*, sacular degeneration of the Graafian follicle. The latter was the only structure in the ovary which deserved the name of false corpus luteum.

The next six cases illustrated the changes which took place during pregnancy.

The weight of the corpus luteum was as follows :

WEIGHT OF CORPUS LUTEUM IN MILLIGRAMMES.

Pregnancy, 3 months	1015
" at term	500
" " " (child still-born)	363
Three days after delivery	310
Eight " " "	270

One peculiar phenomenon was noticed in connection with the corpus luteum of menstruation, namely, the occurrence of a cavity in the centre of the clot, holding a few drops of serum. It was of frequent occurrence in connection with the corpus luteum of pregnancy, but in connection with menstruation such a cavity Dr. Dalton had not before seen, nor did he know of an instance in which such a cavity had been recorded.

DR. GOODELL, of Philadelphia, moved that a vote of thanks be tendered to Dr. Dalton for his admirable report, and that the communication be referred to the Council for publication in the Transactions.

The President announced the following Committees :

NOMINATING COMMITTEE.

DRS. WILSON, of Baltimore, A. H. SMITH, of Philadelphia, and ENGELMANN, of St. Louis.

AUDITING COMMITTEE.

DRS. LUSK, of New York, and BIXBY, of Boston.

The Society then adjourned to meet at 3 P.M.

First Day—Afternoon Session.

The meeting was called to order at 3 P.M. by Dr. Byford, of Chicago, Vice-President.

DILATATION OF THE CERVIX UTERI FOR THE ARREST OF UTERINE HEMORRHAGE.

DR. GEORGE H. LYMAN, of Boston, read a short paper upon the above subject, in which he presented the claims of dilatation of the cervix uteri as a means for arresting uterine hemorrhage, and related cases in which the means had been adopted with advantage. The dilatation had been performed for purposes of diagnosis, and so marked had been the relief from the hemorrhage, which had been the alarming symptom, that special attention had been aroused to the dilatation as a means for its arrest. The first case was one in which there was a small fibroid on the upper part of the cervix ; it had been attended by profuse and frequent hemorrhages. Dilatation by means of a tent was followed by immediate subsidence of the hemorrhage, and the subsidence continued for several months. The second case was one of metrorrhagia occurring in a woman 28 years of age, and in whom no deviation from the normal condition in the uterus could be found. She was liable at

all times to sudden gushes of blood. Dilatation was followed by immediate relief; her periods became regular and the flow normal. To the third case not much importance was attached. The fourth case was one in which menorrhagia was present, dependent upon hyperplastic endometritis. The hemorrhage at times was profuse; for nine months the woman had been confined most of the time to her bed. Fibroids were also present. Dilatation, removal of masses of hypertrophied mucous membrane with the forceps, scraping the cavity with the curette, were followed by immediate and permanent relief, no menorrhagia having occurred for two years and a half. The fifth case was one in which the cavity of the cervix was dilated with a tent, the curette introduced, and small growths removed which had, upon microscopical examination, something the appearance of malignant disease. The dilatation and the use of the curette were followed by an arrest of the hemorrhage. In the first case, although the fibroid was not removed by extreme dilatation, the hemorrhage was immediately controlled. In the second case, hemorrhage, without discoverable cause, and of four years' standing, was relieved by the dilatation and had not returned. In the third case, hemorrhage was greatly diminished by the first tent introduced. In the third and fourth cases it was impossible to affirm that dilatation alone would have arrested the flow, for in both cases the curette was employed and hypertrophied mucous membrane and hyperplastic growths were removed; and yet it did not seem certain but that the dilatation, by removing the constriction of the cervix, might not have alone arrested the hemorrhage.

The theory with regard to the operation was, that it removed the constriction at the internal os, consequently relieved the congestion of the tissues above that part. The suggestion was thrown out, had we not been too ready to substitute cause for effect, and was not the hyperplasia of the lining membrane of the uterus, etc., the consequence of strangulation of the cervical vessels by a moderate constriction of the circular fibres of the cervix, and with the removal of the one, relief would come for the other?

DR. D. H. STORER, of Boston, remarked that he had seen cases within the last three or four years similar to those reported by Dr. Lyman, in which he was exceedingly surprised in noticing how much relief had been given by introducing a sponge-tent. The histories of two cases were related, in which permanent relief from the uterine hemorrhage had been afforded by the introduction of a sponge-tent for purposes of diagnosis.

DR. WILSON, of Baltimore, remarked that he had repeatedly observed the advantage arising from the use of tents for arresting hemorrhage from the uterine cavity, and he regarded Dr. Lyman's explanation as very rational—namely, removal of the constriction at the internal os. A case of eleven years' standing was related, in which there was a large fibroid in the body of the uterus. The doctor did not feel able to do anything in the way of removal of the tumor, but introduced a sponge-tent for purposes of further examination, and from that time forth the woman had no hemorrhage. Dr. Wilson subsequently removed the fibroid by enucleation. Although in his case the hemorrhage was arrested, it was followed by the most terrific labor-pains, which required the use of hypodermic injections of morphine to control.

DR. ALBERT H. SMITH, of Philadelphia, remarked that he had seen many cases in which uterine hemorrhage, that had lasted for years, had been entirely relieved by a single application of a sponge-tent. Especially had this been the case when much enlargement of the organ had been present; and he had seen it restored within three months after such dilatation to the size of the ordinary non-gravid uterus. But in endorsing such dilatation as a method of treatment one caution was necessary, and that was, to exclude malignant disease. For, according to his experience, dilatation in malignant disease might be followed by rupture of the uterus. He had had better results by introducing one large tent, and allowing it to remain forty-eight hours, than by introducing a series of tents, and producing a more rapid dilatation. After a full dilatation by means of a single large tent, protect the patient by the use of antiseptic washes.

DR. SCOTT, of San Francisco, remarked that in the use of these tents it was necessary that great caution should be used with reference to the cause of the hemorrhage. In cases of simple fungoid granulation, or in connection with simple fibroid tumor, as long as there was no plastic inflammation present, a sponge-tent could doubtless be safely used. But in many cases the hemorrhage might depend upon cellulitis, acute or subacute, and in such cases the introduction of a sponge-tent was dangerous. That was a matter, however, which could be readily guarded against, and proper care taken that the uterus was free and movable.

As an assistant to Dr. Lyman's suggestion, Dr. Scott suggested, after dilatation had been effected by the tent, to wash out the cavity thoroughly with water heated to 110° or 115° F. In that way not only was the cavity cleansed, but the admirable effect of hot water in constricting the blood-vessels was secured.

Another efficient agent was iodine. After thorough dilatation and washing out the cavity, Churchill's tincture of iodine could be thrown in with perfect safety.

DR. GOODELL, of Philadelphia, remarked that there was another reason why sponge-tents were so successful in arresting uterine hemorrhage, and that was, because the little growths which gave rise to the hemorrhage became entangled in the meshes of the sponge, and were thus removed with the removal of the tent. A case was related in which a small polypus was removed upon a sponge-tent, the polypus having previously escaped notice. Small portions of the lining membrane of the uterus had been observed upon the sponge-tent on repeated occasions. He could fancy that perhaps in some of Dr. Lyman's cases there had been a small mucous polypus present that had escaped notice, or a fungoid degeneration, which, being removed by the sponge, the hemorrhage ceased.

DR. TRENHOLME, of Montreal, referred to a case of hemorrhage dependent upon the presence of a fibroid situated so low down that it was impossible to use a tent. In that case hemorrhage was relieved by free incision of the neck, accomplishing the same purpose as dilatation, namely, removal of the constriction.

DR. LYMAN remarked, with regard to diagnosis, that no one would think of introducing a sponge-tent into a uterus which was the seat of malignant disease. In his cases the tent had been used for purposes of diagnosis; and in answer to Dr. Goodell, he would say that he had not used the sponge-tent in any case, but the laminaria; hence, there could not have been any removal of fungoid growths by becoming entangled in its meshes. With regard to the *modus operandi* of the incision referred to by Dr. Trenholme, Dr. Lyman believed it covered the same ground as dilatation by means of the tent. The theory which he wished to advance was, that there was a constriction of the vessels at the internal os, which gave rise to congestion of the tissues above; that such constriction was due doubtless to some morbid condition beneath the mucous membrane; hence the operation, although the opening through the canal was apparently sufficiently large; and that such condition was not to be relieved simply by pressure upon the mucous membrane. Might it not be that many of the hyperplastic conditions found above, if not all, were due to constriction or some morbid condition of the vessels at the point indicated, hence mere effects, and not causes?

THE PRINCIPLES OF GYNECOLOGICAL SURGERY APPLIED TO OBSTETRIC OPERATIONS.

DR. A. J. C. SKENE, of Brooklyn, read a paper upon the above subject, in which reference was first made to a communication formerly published in the AMERICAN JOURNAL OF OBSTETRICS, calling attention to the facility with which craniotomy could be performed by the aid of Sims's speculum. Additional cases were reported. Attention was also directed to the aid that could be afforded by the use of the speculum in applying Dr. Thomas's method of treating prolapsus of the funis. A case was related in which the cord was pushed back by means of sponges, held in long holders, through the speculum, and with greater ease and better results than when the cord was reduced in the manner recommended and ordinarily employed. He suggested the use of the same means in the treatment of amniotomies—pushing the presenting part back by means of the sponges through the speculum. Reference was made to cases in which Barnes's dilators were introduced with more than ordinary facility by the aid of the speculum. The doctor had elsewhere called attention to the use of the speculum in the introduction of the tampon, and also in removing an ovum with the scoop and curette in retarded abortion. The difference in the difficulty of operating through the speculum in the management of such cases, when compared with the older methods, was so marked that any one who had tried the former would hardly be induced to again resort to the latter.

DR. NOEGGERATH, of New York, regarded the suggestion of Dr. Skene as exceedingly valuable, especially with reference to replacing a prolapsed cord, and also in introducing Barnes's dilators. Since the perfection of the cephalotribe and the cranioclast, he hardly conceived how it could be that the operation of craniotomy should be resorted to. The method of operating suggested would not apply to the use of these instruments for two reasons: *First*, because of the diminution of space, by the presence of the speculum; and *Second*, because we required all the space possible to depress the handles of the instruments when we had to seize the head above the pelvic brim, and the speculum was therefore an impediment in the way of operating. If craniotomy was to be employed, the method suggested by Dr. Skene was valuable.

DR. REYNOLDS, of Boston, expressed his surprise at the possible defence of any modification of the old method of craniotomy, when we had such instruments as the cephalotribe and the cranioclast. When it was recollected that Braxton Hicks had brought a head with safety through a pelvis whose antero-

posterior diameter was one and a half inches, we had said all that could be reasonably asked of any instrument.

DR. LUSK, of New York, remarked, that when the cephalotribe was employed, it was preceded by perforation; and when the cranioclast was used, it was necessary to disarticulate the bones of the skull before the instrument was applied, and in both operations he could understand how the suggestion made by Dr. Skene would be of value.

DR. BYRNE, of Brooklyn, remarked, that the point in Dr. Skene's paper was to suggest how facility of manipulation in all obstetric operations could be given. He regarded the suggestions as valuable and practical.

DR. SKENE remarked that it was not his intention to displace two of the most valuable of instruments. He was satisfied that there were cases in which narrowing of the pelvis was so marked that, although the head could be dragged through, it was less surgical than to remove the bones through a speculum. As to narrowing the space by using the speculum, the pressure from the speculum gave, instead of diminishing the room, and it was his opinion that the old operation would still be preferred in many cases, if for no other reason, because the new instruments were not always at hand.

EXCISION OF THE CERVIX UTERI.

On motion, discussion upon Dr. Byrne's paper, read at the morning session, was renewed, and

DR. JOHN SCOTT, of San Francisco, spoke as follows: I have listened with great interest to the paper read by Dr. Byrne on "Excision and Amputation of the Cervix Uteri;" but I am very sorry I cannot say with Dr. Goodell that I have listened to it with interest and pleasure also, for I feel myself forced to dissent from the statements of Dr. Byrne, both as to the necessity and the harmlessness of the operation in question.

If I remember aright, the cases which Dr. Byrne considers as those in which the operation is not only justifiable, but necessary, and as likely to afford the best prospect of permanent benefit, consist, first and foremost, of elongation of the cervix, with or without hypertrophy—simple hypertrophy of the cervix, the exuberant granulation of the os—conical os, and lastly, cancer of the uterus, including, of course, epithelioma uteri. First, we have to consider the nature of the diseases considered most appropriate for the operation; and I here venture to affirm that, with the advancement we have lately made in our knowledge of the pathology of the uterus, it will be found most difficult to detect

the existence of a case of "allongement" of the cervix pure and simple at the present day.

To Dr. Emmet we owe the discovery of a lesion hitherto undetected, unsuspected even by the profession, and the existence of which enables us to account for the existence of hypertrophy of the cervix, most commonly with profuse granulation and frequently with induration, namely, laceration of the cervix; and when the laceration is a double one, and extends through the vaginal junction, the formation of cicatricial tissue at the apex of the lacerations sometimes strangulates the cervix itself, thereby producing a marked degree of hypertrophy in the lower segment, constituting a condition apparently demanding removal by amputation. The intractable erosion with exuberant granulations commonly accompanying laceration, we now know is kept up and prevented from healing by the separation of the flaps, and the consequent friction which takes place between them and the floor of the vagina when the patient either stands or walks. In other cases where erosion is absent and elongation exists, we can detect by the presence of a cicatricial line the previous occurrence of a laceration, and we can account for the increase of growth from the irritation produced by the cicatricial tissue still left. If therefore I am correct, and I think I am, in believing that the hypertrophies and intractable erosions or ulcerations which are held to justify amputation of the cervix are in reality owing to the lesion stated, then it follows that the operation is not needed, and that the proper treatment consists in removing the cicatricial tissue by paring the edges of the lacerations and uniting them by silver sutures; and by this process I have constantly succeeded in healing the erosions, removing the hypertrophy, and restoring the patient to perfect health. I admit I have to contend against the authority of eminent men in venturing to take issue with those who advocate the practice, and among those Dr. Thomas has given it his sanction in his book on diseases of women; but I venture to prophesy that, when that gentleman issues a new edition of his valuable work, he will greatly modify the opinions he now so strongly enunciates on the subject, for, if I mistake not, that gentleman very seldom resorts to amputation of the cervix now, and scarcely ever except in cases of epithelioma uteri; whereas, he constantly performs the operation for laceration of the cervix in cases which Dr. Byrne would, according to the principles laid down by him, have unquestionably amputated. We now come to consider the existence of cancer of the uterus when the operation of excision or amputation (and Dr. Byrne did not confine himself to epithelioma only) is held by the author to be not only warrantable, but

highly commendable, as necessary for the removal of the disease, or at least as offering the best prospect of a prolongation of life and a mitigation of the patient's sufferings. Where epithelioma exists and is sufficiently localized to permit of its removal, there can be no question about the propriety of the operation; but in how few cases are we enabled to witness malignant diseases of the uterus in these early stages, and how commonly we find that cancerous infiltration has extended to the surrounding strictures and produced fixation of the organ—a state of things which renders interference very questionable. The cantery may be useful, but excision of part of a disease is clearly useless. As regards the mode of operation, Dr. Byrne claims that the galvano-cantery is superior to the knife, the scissors or the éraseur, and particularly as being free from the risk of hemorrhage. During the eight years of my connection with the California State Woman's Hospital as its chief medical officer, I have had repeated opportunities of seeing cases where amputation of the cervix was considered advisable, and during the earlier years of my service I confess to having frequently performed it, acting as I did according to "the light that was in me." I wish I could review with pleasure what I have done, but I cannot; for, while I often succeeded temporarily in removing the hypertrophy which existed, I found after the lapse of a certain time that it had returned, and I had then the disadvantage of having on my hands an organ deprived of its natural supports and liable to versions which a pessary was incapable of remedying. When I did operate, I preferred removal by the scissors as the simplest and most natural; and when the uterine tourniquet was used to control the circulation, I have not had to contend against the occurrence of hemorrhage which seems to be so much dreaded. And now we come to consider the particular operation so ably advocated by Dr. Byrne, and endorsed by men of undoubted eminence and ability. Gentlemen, my utterances may be feeble and my authority of little value, but I cannot refrain from entering my solemn protest against an operation which entails injuries in the form of contraction and stenosis that are not only deplorable, but irremediable. To my mind, the whole thing lies in a nutshell. The advocates of the operation must concede that the galvano-cantery wire produces a wound which cannot heal by first intention. It must heal by granulation; granulation is followed by cicatrization, and cicatrization must, ipso facto, terminate in contraction. Now, I most emphatically state that the cases I have examined where the galvano-cantery wire has been used exhibit such a degree of contraction and positive stenosis of the os, as to involve the patients in extreme

suffering at the menstrual period and to place them in extreme peril for the future, as likely to occasion hematocele or induce disease elsewhere. In one case operated on by one of the most distinguished gynecologists of New York, the results were just such as I have described, and though I have done all I could to remedy the stenosis, the os now admits, at the end of three years, only with the greatest difficulty, the very smallest probe, and it is some time before the os can be recognized at all. Furthermore, when the wire embraces the vaginal reflection, and thus it does occasionally occur, the contraction which takes place is aggravated and an additional fold is drawn over the contracted os, which renders it extremely difficult to force an entrance. Gentlemen, the tendency of modern surgery is towards conservatism; in other words, to the avoidance of all operative interference which is not absolutely necessary, and in obedience to this spirit I think we as gynecologists, occupying as we do a not yet well defined position with the public, should endeavor to accomplish our ends with the least possible interference with the integrity of an organ of such vital importance to the female. In offering these remarks I may have spoken with undue warmth, but I have spoken from the strength of my convictions, and, believing as I do, that the operation in question is simply a mutilation of the uterus and unproductive of the beneficial results claimed for it, I cannot but hope that it will soon be eliminated from the domain of rational surgeons.

DR. BYFORD, of Chicago, remarked that the point upon which he wished particularly to speak was with reference to amputation of the cervix in connection with malignant disease. He was a strong advocate of that operation in the treatment of malignant disease of the cervix, but the object in view should always be clearly kept in mind, when the excision was performed. It was not with the view of curing the case, unless it was one of epithelioma. In such a case, perhaps, the operation could be performed without encroaching on the diseased tissue, and without doubt cure would be occasionally effected. He believed that one of the most beneficent operations that could be performed was removal of the cervix uteri in malignant disease of the uterus. To illustrate, he alluded to what was generally termed the cancerous diathesis. We were taught early in this century, and the idea had not entirely died out yet, that the cancerous diathesis was produced by the cancer before any other visible manifestations on the constitution were brought about. His own impression with reference to the cancerous diathesis was that it was a species of septicæmia, induced during the degeneration of cancerous tissue. Cancer

was a disease regular in its progress; it had a period of maturity and a period of dissolution, and the dissolution was brought about by the inherent principles in the cancer itself. When disintegration of tissue began, absorption from the disintegrating mass commenced, and, consequently, we had the development of what had been known as the cancerous diathesis. As the disease progressed we had a perfectly formed septicæmia, of which almost all patients having cancer died. He was of the opinion that it was the experience of gynecologists generally that cancer killed in consequence of the absorption of poisonous material from the sloughing surface. When, therefore, we had this stage of cancer developed, and the sloughing ulcerating mass could be removed, then that set of symptoms embraced in the term cancerous diathesis, for a certain length of time, would be removed—sometimes for weeks, sometimes for months, and sometimes for years. In that stage, therefore, he regarded excision as the proper treatment of the diseased portion. He was aware that in some cases only a small portion of the diseased structure could be removed; but there were many cases in which a large portion of the diseased mass could be taken away, and in that way we got rid of the symptoms of septicæmia. In those cases in which we could not remove the diseased portion entirely by excision, what remained, to a very great extent at least, might be removed by scraping the diseased tissue off. He had noticed, in reading a discussion which had occurred in the New York Academy of Medicine, regarding the treatment of malignant disease of the cervix uteri, that the tendency was to avoid scraping into the deeper tissues. The ulcerating portion of the cancerous mass could be scraped off, but it seemed to be the opinion that it was better not to go through the diseased part into the deeper tissue.

Dr. Byford, however, was of the opinion that there was not much danger of going too deep; the greatest danger was in not going deep enough. With reference to the mode of amputating the cervix uteri, he had employed the *écraseur*, scissors, knife, and the galvano-cautery, and, as far as his experience went, he was inclined to favor the galvano-cautery. He had not seen unfavorable results follow the use of the *écraseur*. In one case he had the same kind of stricture resulting as that mentioned by Dr. Scott as occurring after the burning process. He could not help believing that most operations for removal of the cervix uteri might be followed by the same kind of constriction. He could understand that the hot wire, whose influence reached some distance beyond the cut surface, might produce a coagulation of blood, closing up the capillary vessels, and also leave the surface in a condition which might be followed by a large

amount of cicatricial tissue; consequently, produce that constriction which had given rise to such strong objections against the use of the galvano-cautery.

DR. NOEGGERATH, of New York, remarked as follows: Neither Dr. Byrne nor I have ever amputated the cervix for fissure or laceration of the neck. The operation of excision and amputation of the neck I have performed in forty-one cases; thirty-five with the galvanic cautery, six with knife and scissors. Twenty-three of the cases comprised that class of diseases named areolar hyperplasia, glandular hyperplasia, simple hypertrophy, etc., while eighteen were cases of malignant disease.

Sequelæ.—Hemorrhage of the severest kind occurred in two cases after amputation with knife and scissors; secondary hemorrhage after amputation with heated wire took place in two cases, both operated for areolar hyperplasia. In the first instance hemorrhage occurred on the eighth day, in consequence of diphtheritic deposit upon the wound. In the second it took place at the end of the second week, from proliferating fungous granulations having developed on the stump.

Of the eighteen cases of malignant disease of the neck, eight had no relapse up to the present time. I have either seen or heard of all of them this year with two exceptions, one of whom I saw well six years after the operation, another four years after it. The date of operations performed in these cases goes back from 1872 to 1868. Among them were two cases of sarcoma, two of canceroid, two of carcinoma of the neck.

In two other instances I exhibited, before the Obstetrical Society of New York, specimens of uteri, the neck of which had been amputated for canceroid and carcinoma. In the first case the operation was performed with the scissors, followed by the application of red-hot iron; in the second, by the heated wire. Both had died about nine months after the operation; in both the stump was free from any disease.

The question has been raised at our first meeting whether pregnancy ever resulted after amputation of the neck.

I have noted down seven cases in which this took place. Four of these had canceroid, one follicular hypertrophy of the neck, two areolar hyperplasia. In all but one the galvanic cautery was employed.

The danger of constriction of the os following amputation with the wire heated by the galvanic battery has been unduly exaggerated. It occurred once in my thirty-five cases, but remedied itself by pregnancy and delivery, at full term, which took place about a year after the operation.

Least reaction followed those cases where the neck had been

amputated for carcinoma by the heated wire. More uterine or peri-uterine congestion was observed after the amputation of the neck, by cutting instruments for chronic enlargement and indurations.

The severest reaction in the shape of acute parametritis occurred in two cases after amputation for areolar hyperplasia by means of scissors. I have avoided the use of the *écraseur*, on account of the danger of opening into Douglas's cul-de-sac.

The operation with the heated wire has certain advantages over that with the scissors, and vice versa.

If we use the former, there is no bleeding; there is less reaction, and the effect of radiating heat modifies to some distance the life of tissue by destroying beginning cell-development. On the other hand, the greater reaction following a wound which is suppurating or granulating for a length of time, as we see it after amputation with scissors, is desirable in cases of so-called chronic metritis or areolar hyperplasia.

With regard to the operation, as recommended by Drs. Sims and Emmet, covering the wound with a flap from each side, it has certainly the advantage of avoiding both primary and secondary hemorrhage. But, whenever I have to watch the raw surface after amputation, with a view of making application to granulations of a suspicious character, I want the field open for inspection. And this is necessary in all cases where we operate for malignant disease of the cervix; and in those cases where I perform the operation for chronic enlargement and induration, I desire the wound to heal up as slowly as possible, in order to have its full alterative and revulsive effects on the supra-vaginal part of the uterus. The field for Sims and Emmet's operation is restricted to those cases where we have to deal with simple (numerical) and glandular hypertrophy.

The Society then adjourned to meet at 10 A.M., May 31st, 1877.

Second Day—Morning Session.

DR. BYFORD, of Chicago, Vice-President, in the Chair.

RESEARCHES ON THE MUCOUS MEMBRANE OF THE UTERUS.

DR. ENGELMANN, of St. Louis, to whom the Society had assigned the labor of making researches with reference to the mucous membrane of the uterus, reported that some material had been furnished, but not sufficient to warrant him in making a report upon what had been received. A number of specimens derived from patients who suffered from what was known as membranous dysmenorrhœa had been sent to him, but in

not a single instance could the material discharged be safely called *cronpous*; it consisted merely of the superficial layers of the mucous membrane, with the glands and blood-vessels belonging thereto; they were simple casts. These discharges were formerly regarded as *cronpous*, but according to the late investigation of a German pathologist the term *cronpous membrane* had been confined to discharges without any signs of glands or traces of mucosa. Dr. Engelmann had heard of such a case, but he had been unable to obtain any specimens, in which at times during the menstrual period, there was a *cronpous* discharge from the uterus, and at times a *cronpous* discharge from the rectum. With regard to the changes in the mucous membrane of the uterus during menstruation, the single specimen which he had received confirmed him in his previous views—namely, that the mucous membrane was not shed. Leopold's late paper had shown that he entertained the same view. Dr. Engelmann hoped he would be able to obtain a sufficient number of specimens to enable him to make a full report at the next annual meeting of the Society.

ON THE NECESSITY OF CAUTION IN THE EMPLOYMENT OF CHLOROFORM DURING LABOR.

Dr. Lusk, of New York, read a paper upon the above subject, and submitted the following propositions:

1. Deep anæsthesia, carried to a point of complete abolition of consciousness, retards and sometimes suspends uterine action. It was that fact that made it so valuable in many cases, but safety required that the patient should come partially from under the influence before complete delivery was effected, in order to avoid hemorrhage.

2. Chloroform, even when given in the usual obstetric fashion, might in exceptional cases so far weaken uterine action as to create the necessity for ergot and the forceps.

3. Patients in labor do not enjoy any absolute immunity from the deleterious effects of chloroform. Cases were related.

4. Chloroform should not be given in the third stage of labor.

Cerebral anæmia from any cause enhances the risk of anæsthesia.

5. The more remote influence of large doses of chloroform during labor upon the puerperal state is a subject which calls for further investigation and inquiry.

Dr. WILSON, of Baltimore, remarked that the cases reported by Dr. Lusk were the first which he had heard of in which death had occurred from chloroform. He had always felt the

most perfect confidence in the agent. With reference to post-partum hemorrhage following the use of chloroform he had never had a case, nor had he seen the slightest ill effects following or attending its use during an experience of twenty-eight years, and an administration of the agent between two and three thousand times. In some sections of the country it was considered almost criminal to use chloroform as an anæsthetic, and in some sections, also, if any accident attended its use the physician would be liable to indictment. He had employed ether only four or five times, which perhaps was a rather unsafe statement to make in Boston. Dr. Wilson always preceded the administration of the chloroform by a dose of stimulant.

Dr. SMITH, of Philadelphia, regarded the paper as one of great interest, and thoroughly endorsed all the apprehensions expressed regarding the use of chloroform. In his own practice he employed Squibb's ether, believing that it possessed all the advantages of chloroform and could be used with absolute safety. He used it in ordinary cases of labor. Yet there were cases in which a rapid and perfect loss of consciousness was desired, and under such circumstances advantage might be derived from the use of chloroform. For example, in hemorrhagic abortion, where an absolutely relaxed condition was desirable for the purpose of giving the opportunity to carry the finger instantly to the fundus of the uterus for the removal of the ovum; in such cases he always employed chloroform, because the short time for which the patient was under its influence, as a rule, rendered it safe. But in ordinary obstetric practice he had the same apprehensions spoken of by Dr. Lusk, and perhaps to a greater degree.

Dr. S. H. TEWKSBERRY, of Portland, was made member by invitation.

THE PRESIDENT'S ADDRESS.

Dr. BARKER opened his address by paying a high compliment to the Publishing Committee, and to the indefatigable zeal and conscientious labor of the Secretary upon the volume of Transactions which represented the work of the first session of the Society. He hoped the standard would not be lowered. Appropriate reference was made to the late Dr. Buckingham, of Boston, and Simon, of Germany, whose deaths had occurred since the last session. With regard to the policy of the Society for the future, there was no necessity for a rapid filling of the limited list of members. The character of the candidate should be an important consideration. None should be elected except those who possessed personal and professional eminence. It

was suggested that honorary membership be not conferred until age had exempted the candidate from active work; exceptionally, honorary membership might be conferred in recognition of contributions of undoubted value to this special department of science. All should be active working members. If members became inactive, some steps should be taken by the Society by which it could be rid of such "cumberers of the ground."

A Bibliography for each volume of the Transactions was suggested, believing that it would enhance their value and circulation. Papers read before the Society should be perfected and left in the hands of the Secretary at the time of the session.

The President then passed to the more immediate consideration of his subject—namely,

MEDICAL GYNECOLOGY.

He had no new discovery in science, or new improvement in art to announce. The most attractive improvement had been in the direction of physical diagnosis and surgical operations, and medical gynecology had been, comparatively, left in the background. He would not depreciate the importance of surgical gynecology, for in that department very striking results had been achieved for the relief of suffering and for the preservation of the body. Ovariectomy was conservative surgery in its highest sense. But operations of that character must inevitably be left in the hands of the few who had had special training and experience in order to acquire the necessary dexterity in manipulation in their performance.

Dr. Barker then passed to the consideration of the work at present most needed in gynecology. The science of law was based upon the decisions of judges, but we had no such digest in gynecological science, and, at present, such fixed rules for our guidance were impossible. There were some things upon which there was a union of opinion, but there were yet many points in pathology and practice which were unsettled. For example, the question of the pathology and management of uterine displacements was a question which, for more than twenty years, had been the subject of vigorous discussion and controversy. There were certain questions in connection with the subject which had been pretty definitely decided. It was an accepted fact that plastic effusion into the pelvic cavity might be followed by displacement of the uterus and consequent disturbance of organs to which it might become attached; and that various displacements might be modified by certain neurotic and vas-

cular conditions which in certain instances would be diminished when the organ was restored to its proper position. But there were two classes of observers upon such cases, and gynecologists differed greatly with regard to the comparative frequency and the relative importance of such displacements. Since 1845, one hundred and forty-two men had sought immortality in devising and describing some new form of pessary, and, in general, the medical treatment of uterine affections had received much less attention than the surgical. As a general statement it was submitted that all mechanical treatment of uterine affections and displacements was neither safe nor useful until all associated pathological conditions had been overcome; and that all local surgical and mechanical treatment would fail as long as the blood was deficient in its proper proportion of nutriment, and therefore proper constitutional treatment was an essential to success in the treatment of all such cases. There was a medical aspect to the question of laceration of the cervix as well as to the question now being discussed regarding the justifiableness of the operation for the removal of the ovaries. Cases were referred to, whose histories pointed out the value of proper medical treatment, and were strongly suggestive of its great importance. "Medical gynecology should have as important a part in this Society as uterine surgery."

DR. GOODELL, of Philadelphia, moved that the thanks of the Society be returned to the President for his admirable address, and that it be referred to the Committee for Publication.

Unanimously adopted.

On motion made by DR. THOMAS, of New York, Dr. Gordon, of Portland, Maine, was elected member by invitation.

(To be continued.)

REVIEWS AND NOTICES OF BOOKS.

TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY. Vol. I.
For the year 1876. Boston. Riverside Press. 396 pages.

"In response to a summons issued on May 24th, a number of gynecologists from various parts of the United States came together at the Hall of the Academy of Medicine, New York, on June 3, 1876, for the purpose of forming a society for the advancement of the special department of medicine in which they were chiefly interested." As a result of this preliminary conference and the first annual meeting, held at the same place, on September 13th, 14th, and 15th, 1877, we have before us a volume of Gynecological Transactions, which is an honor, not only to the society from which it emanates, but to the profession at large.

"Transactions" are as a rule excessively stupid and wearisome affairs, containing but few grains among a superabundance of chaff, and holding a position not far removed from that held by "Congressional Reports." From a society made up largely, at least, of leading specialists in this branch in the country, and whose members are almost all widely known, we certainly have a right to expect something better.

Nor are we disappointed. Few volumes which have recently come under our notice have been so extremely interesting and instructive. The papers reach, as a whole, a very high general average of excellence, and some, indeed, are superlatively good. For this the names of Barnes, Barker, Emmet, Goodell, Peaslee, Thomas, and others of that sort, are sufficient guarantee.

The volume contains an account of the inaugural meeting of the Society, the by-laws, list of Fellows, and the proceedings of the first annual meeting.

The first paper is the address by the President, Dr. Fordyce Barker. It is principally noticeable for the high standard which it is proposed to set up for admission to the Society—a standard which we hope will be attained and retained. Like most other addresses in '76, it has a strong Centennial flavor. It is a most appropriate introduction to the volume.

The paper by Dr. Emmet, on the "Etiology of Uterine Flexures,"

is the result of long and varied experience and much study. Having the carefully recorded histories of 345 cases of flexures, he seeks by careful analysis to separate the causes of each kind, and to show the proper mode of treatment appropriate to each. The paper bristles with figures, and is not very taking in style, but it demands and will well repay careful examination.

The second paper is a short one, by Dr. Skene, of Brooklyn, and, like everything he writes, is short, sharp, and to the point. He calls attention to a condition, often overlooked, but often of great importance, "Cicatrices of the Cervix Uteri and Vagina."

Dr. Battey, of Georgia, has given us in the third paper a most interesting account of his operation of "Normal Ovariectomy." This paper will certainly excite great interest, as containing the histories of a number of cases in which the ovaries have been removed, together with the author's views on the subject. This operation is still *sub judice*, but the showing made by Dr. Battey must weigh heavily in its favor.

Dr. J. Matthews Duncan gives next a short paper on "Central Rupture of the Perineum," which he defines as something different from that which we are generally supposed to mean by central rupture—he holding that a central rupture may take place without all the tissues being torn, or without a new artificial passage into the vagina being made.

Viburnum Prunifolium Dr. E. W. Jenks considers as a most efficient agent in the treatment of uterine disease, particularly abortion. He offers no explanation of its mode of action. The remedy should certainly have a trial.

Dr. Parvin relates a curious case of *xenomenia*, where the lower lip was the seat of the vicarious hemorrhage. One of the most important, because one of the most suggestive papers in the volume, is that contributed by Dr. Barnes, of London, entitled the "Relation of Pregnancy to General Pathology." The paper is too long and too full for us to give even an idea of its contents, but we have read it with extreme interest.

The paper on "Fibroids," by Dr. Byford, is meant to call up the fact, "that fibrous tumors of the uterus are sometimes destroyed and expelled by the unaided powers of nature," to show how this is done and how we may imitate the process. The paper contains a number of cases illustrating the author's methods.

Dr. Thomas reports a case of abdominal pregnancy treated by laparotomy, with some remarks on the treatment of that condition.

Other papers which deserve special notice are those by Dr. Camp-

bell on "Pneumatic Self-Replacement of the Uterus," and Dr. Noeggerath on "Latent Gonorrhœa," Dr. Goodell on "Genital Lesions in Childbirth," the papers of Lawson Tait, Bixby, and Chadwick. But where all are so good, it is hard to particularize.

The volume closes with a very interesting obituary by Dr. Mundé, of Dr. Gustave Simon, Honorary Fellow—a man who has done in Germany what Sims has done in America, in originating and perfecting many operations on the vagina and uterus. His loss will be felt the more, in that he does not seem to have left a successor to fill his place.

The addition of the discussions which followed the reading of such of the papers as were read, adds very much to the value of the volume, and is a practice which should recommend itself to all societies publishing their transactions.

Some of the papers were read only by title, and so did not appear in the JOURNAL reports of the meetings.

The volume is handsomely gotten up with fine type and good paper, and we must congratulate the Secretary on the care with which he has done his share of the work.

M. D. M.

THE AMERICAN
JOURNAL OF OBSTETRICS
AND
DISEASES OF WOMEN AND CHILDREN.

VOL. X.] OCTOBER, 1877. [No. 4.

ORIGINAL COMMUNICATIONS.

A CONTRIBUTION TO THE DIFFERENTIAL DIAGNOSIS BETWEEN HOLLOW UTERINE POLYPUS AND COMPLETE INVERSION OF THE UTERUS.

BY
G. E. SUSSDORFF, M.D.,
New York.

(With two woodcuts.)

It is comparatively rare, even in an extended experience, to meet with cases of hollow uterine polypi, and rarer still to find them simulating complete chronic inversion of the uterus.

Very little has been written about this variety of polypoid growth, and what literature there is upon the subject is meagre and barren of instruction in respect to their pathology, or of information that will assist in establishing a correct diagnosis. There are not more than four cases of this kind on record.

Colombat mentions having operated upon a large hollow tumor, which looked so much like an inverted uterus, after its removal, that he at first feared he had mistaken an inversion for a polypus.

Richmond and Jules Cloquet had a similar experience, but were not able to prove that the uterus had not been removed

until some years after, when the patient died, and a post-mortem examination revealed its presence.

Boivin and Dugès mention a polypus of this character in their work, and state that before its removal it was considered an inversion by several distinguished physicians.

The late Dr. Henschel, of New York, reported a case of the kind some few years since, before the New York Obstetrical Society. Baker Brown and Thomas simply refer to these cases in their works.

With the exception of the above cases the archives of medical literature yield no further information. With the hope, therefore, of contributing something more to our present knowledge on this subject, I propose, as briefly as possible, to report a case which came under my care some three years since, and to add a few remarks upon diagnosis and pathology. This unusual and in many respects extraordinary case illustrates very clearly the perplexing nature of these tumors, and the difficulties to be solved before a positive diagnosis can be made. The history of the case is as follows:

Mrs. S. P——, a tall, thin brunette, forty-nine years of age, and a widow for some years, was the mother of several children, the last of which she had borne twenty years before. She had never had an abortion, and had usually enjoyed good health, with the exception of occasional attacks of dyspepsia and intermittent fever.

Her menses first appeared at the age of fifteen, and until the beginning of her present sickness she had never had, as far as she could recollect, any uterine trouble.

According to her statement, her present illness began some two years before, and was brought on suddenly from having attempted to lift some heavy article of furniture. She was immediately attacked with hemorrhage from the vagina, pain in the loins and back, weight and dragging in the pelvis, nausea and great prostration—in short, by such symptoms as usually accompany a sudden displacement of some portion of the pelvic viscera.

She was compelled to take to her bed at once, and her family physician, who attended her, pronounced her case to be a form of uterine displacement, the exact nature of which I could not ascertain from her. Neither could I learn what treatment had been employed other than that she had been kept in bed for three weeks, and that pessaries had been worn for some time after. At the end of a month the acute symptoms had subsided, and soon after she was sufficiently recovered to attend to the ordinary duties of her household.

Her general health had received a severe shock, and nervous symptoms soon came on, such as severe and continued headache and

great irritability of temper. The menses, which previous to the attack had been regular, sufficient in amount, and without pain, had now become irregular, in respect to both time and quantity, and were always painful. There had been a considerable sanguino-purulent discharge at the beginning of her attack, which continued as a thin, irritating leucorrhœa.

There had been considerable difficulty in defecation and some dysuria, until the pessaries which she had worn successively were abandoned, and all efforts at supporting treatment discontinued.

At the end of six months her general condition had not improved.

It seems at this time her physician told her that she was passing through the climacteric period or change of life, and counselled her to be patient and endure her ills with as much fortitude as she could command, in the hope of permanent relief when cessation should come. As a consequence of this advice, and from a mistaken impression on her part, and that of her friends, that no good would result from active medical treatment under such conditions, she received but little attention for many months. Cessation did not come, and despairing of relief from natural causes, (?) she again sought medical advice. At this time, some two months before I saw her, the menstrual periods had ceased to be distinct, the flow had become continuous. She was examined, and her case this time pronounced prolapsus uteri. The prolapsus, she was told, had then been reduced.

In spite of the reduction and constitutional treatment, such as large doses of tinct. ferri chlor., tinct. cannabis indicæ, gallic acid, etc., and tonic treatment in general, the flow continued and her debility increased.

To such an extent had this state of affairs reduced her that she presented, at my first visit, an almost exsanguinated appearance, and was so weak as scarcely to be able to move from her chair to the bed.

This is the history of the case up to the time she first came under my care. The facts as here stated were given me by the patient and her sister, with whom she lived. I was unable to obtain any information from the physicians who attended her, which I regret, since this history might thereby have been made more complete. The period embraced in this history was about two years.

Having obtained the information just given, and finding my patient willing to submit to a thorough physical exploration, I proceeded at once to examine her.

Upon introducing the finger into the vagina, a large body was at once discovered lying a short distance from the vulva, and completely filling the canal. Carefully passing the finger along the surface of this body, and at the same time making

downward pressure through the abdominal walls with the other hand, its extent and character were sought for.

The body of the tumor was about the size of an orange, and seemed quite movable. Its surface was smooth, except a few circumscribed spots, which were elevated and a little rough. It was not lobulated but evenly ovoid. In consistence it was firm, though compressible, elastic, and tough. It was slightly sensitive, though not painful.

The pedicle was attached to the cervix, and was but little smaller than the body of the tumor. It was firmly adherent, and was closely surrounded by the lips of the cervix, which were thickened, congested, and painful.

The attachment was considerably higher on the right side of the cervical canal, as near as could be judged, very close to the internal os; it then gradually approached the external os on the left.

The vaginal walls gave no signs of being diseased. The posterior portion of the vagina contained fluid, which was principally blood and mucus; but these secretions were not specially offensive.

The tissues of the anterior portion of the pelvis and the base of the bladder were somewhat dense and painful. The perineum was in a normal condition.

These physical signs so far indicated the tumor to be a polypoid growth, and seemed to explain the cause of all her suffering.

All these symptoms and signs, however, belong as much to inversion of the uterus as to polypus. It needed, therefore, the confirming evidences of the sound to complete the diagnosis. The case seemed simple enough.

Introducing the left index-finger into the vagina as a guide, an attempt was made to pass an ordinary Simpson's sound, but at no point could an opening be found. Other probes of different sizes were used, every point between the pedicle and lips carefully and patiently explored, but with no better result. The probe was completely obstructed at every point. Suspecting the case might possibly be a complete inversion, instead of a polypus, I again examined the tumor with the fingers. All the signs previously elicited were confirmed, *with this addition*: strong pressure upon the body of the tumor gave evi-

dences to the feel that it was *hollow*. It could be indented, and would resume its original form as soon as the pressure was removed. It yielded to the finger like a soft hollow india-rubber ball does when pressed upon.

This discovery, added to the failure to pass the sound, was sufficient to produce a considerable degree of perplexity. Other measures of physical exploration, however, remained, such as conjoined manipulation, rectal touch, and recto-vesical exploration, but finding my patient tired and nervous I thought it better to delay further examination for the time, and left her, after having prescribed an anodyne and large doses of fluid extract of ergot for internal administration, besides astringent vaginal injections, and an enema to clear out the rectum.

The question to be settled was evidently one of differentiation, and the history of the case, interesting though it was, could give but little positive diagnostic information. This could alone be obtained from physical signs.

At my next visit the following morning, the patient was seen with me by my friend the late Dr. C. B. Nottingham, of Georgia, and several other gentlemen of skill and experience, and a thorough and final examination made.

A summing up of the investigation showed the following results:

1st. The probe was completely arrested at the neck.

2d. Conjoined manipulation did not reveal the uterine body, nor did it reveal a ring where one horn of the uterus should be.

3d. Rectal touch revealed a small ovoid body, lower than normal for the uterus, and a little above a line corresponding with the junction of the vagina to the neck.

4th. Recto-vesical examination by means of a sound in the bladder and two fingers in the rectum did not reveal the uterus in the anterior, upper, or lateral parts of the pelvis. The fingers in the rectum discovered the body before mentioned, but the probe in the bladder could not be made to touch it.

5th. The pedicle was very large.

An analysis of the above proved:

That the probe favored inversion.

Conjoined manipulation gave nothing.

Rectal touch revealed a body which was probably the uterus,

but it might be a tumor formed by the liquid confined in the recto-uterine sac of the vagina, or a pelvic tumor.

Recto-vesical exploration gave no reliable information.

The size of the pedicle favored inversion.

The evidence, when analyzed, was anything but satisfactory or conclusive. Had the uterine body been recognized, and the tumor been an ordinary polypus, the probe would have been worked through the tissues surrounding the pedicle into the uterus, and thus have proved incontestably the nature of the case. This necessary information was wanting, and, as matters stood, such a proceeding was not justifiable.

With the view, therefore, to determine, if possible, the structure of the tumor, a strong pair of placental forceps were applied, and it was pulled down, and brought well without the vulva. It here presented the same characters as before stated, was covered by mucous membrane, and flecked over with bright, fleshy-looking spots, which were very vascular. Percussion and pressure confirmed the presence of a *cavity*. Detachment of the pedicle was attempted by means of the finger-nail and the handle of a scalpel, but the tissues were tough, and besides considerable bleeding ensued from the congested lips of the cervix which surrounded the pedicle. The tumor was returned to the vagina, and the best means of treatment, supposing the case to be an old complete inversion, were considered. Amputation was the only measure likely to insure good and speedy results. The condition of the patient would admit of no prolonged course of treatment.

But amputation of the womb is a very serious operation, excision of a polypus a very simple one. Feeling unwilling to operate for amputation as the case stood, I determined once again to essay the probe.

Two reasons in addition to those already mentioned prompted me to do this. First. When the tumor was being dragged to the vulva for inspection, I noticed that the lips of the cervix surrounding the pedicle remained the same; *there was no shortening*. The other reason was, that when traction was made, the small ovoid body which was felt through the rectum followed the tumor downwards also. Selecting a stout Simpson's sound, it was introduced between the pedicle and cervix, and that portion of the attachment highest

up, to the right, selected as the best point to make the effort to pass it.

Counter-pressure was made through the thin abdominal walls with the left hand, and a firm and steady boring force used by means of the probe in the right. After a few moments, the tissues yielded and the probe slowly passed inwards. Finding that it would not enter to a greater depth than $2\frac{7}{8}$ inches, I attempted to approximate it to the abdominal walls, which, after some effort, was accomplished. The probe had undoubtedly entered the *womb*, and not the *abdominal cavity*.

This proved incontestably the nature of the case. It certainly was not an inverted uterus, but a polypoid growth.

The treatment pursued, in a few words, was as follows: A stout double silk ligature was passed through the pedicle high up within the cervix, tightly tied, and the parts returned into the vagina. The ligature was applied instead of the knife, because the tumor was very vascular and further hemorrhage would not have been borne by the patient without imperilling her life. The galvano-cantery would no doubt have been better, but was not procurable. No hemorrhage or constitutional disturbance followed the operation, and on the sixth day after, the tumor came off. From this time the patient began steadily to improve, and at the end of the year had regained health and strength. The hemorrhage ceased at the time the tumor was ligated, and the menses have not returned up to the present date.

One point I came near omitting to mention, which will in a measure account for the absence of the uterine body from the anterior, upper, and lateral portions of the pelvis, and also for its low position as discovered by rectal touch.

Three weeks after the operation my patient complained of dull, aching pain in the pelvis and back, and desiring to inspect the condition of the os, I made a specular examination. The cervix was still somewhat dilated, congested, and hypertrophied. The sound entered the uterus two and a half inches, and discovered it to be in a state of *extreme retroversion*. It is quite likely that this condition of retroversion had existed for a number of years, and that it was present even to a greater extent at the time of my first examination, when the polypus was *in situ*.

The close resemblance of this tumor to complete chronic inversion, with the relation of parts to each other, will, perhaps, be better appreciated by examining the accompanying wood-cut No. 1.

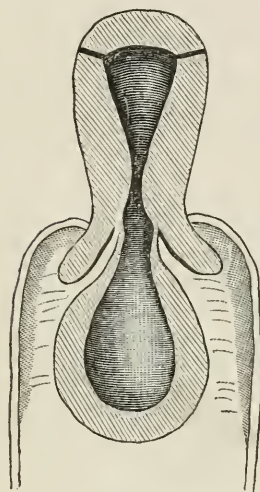


FIG. 1.

This cut is simply diagrammatic, and shows the uterus with polypus attached.

The space represented here between the lips of the cervix and pedicle did not really exist—the parts were in such close juxtaposition that the finger could only with difficulty be forced between.

It is intended by the space to show the attachment of the pedicle, and to illustrate the principle upon which traction gives positive diagnostic results.

REMARKS ON DIAGNOSIS.

THE DIAGNOSIS of these cases depends mainly upon the probe, but not always, since it sometimes happens, as in this case, that it will give but limited information when commonly essayed.

In endeavoring to ascertain the presence or absence of the uterus by other means, the result in all such cases will be unsatisfactory, even in the most skilful hands. Indeed there are many instances on record in which errors were committed, followed by fatal results, from a neglect to use with care this means of diagnosis. It is not a very infrequent occurrence for an inverted uterus to be mistaken for a polypoid tumor; neither is it very unusual to mistake for the pedicle of such tumors an inverted part of the uterus to which it is attached, and remove it by incision or ligature. Instances of this last kind have been reported by Denham, William Hunter, and others, which resulted fatally. An instance of the first kind is cited by Dr. Thomas in his work, in which a celebrated surgeon of this city, after a hasty examination, removed a tumor which he thought

a polypus hanging in the vagina, and found to his surprise that he held in his hand an inverted uterus and its appendages; the patient fortunately made a good recovery. How many cases are there like this one, of which we hear nothing! The experience of Colombat and Madam Boivin has already been alluded to.

The information gained in my case from measures of investigation commonly used, and before the probe was made to pass the obstruction, was of such an ambiguous character that a diagnosis might have been made of either inversion or polypus with equal plausibility.

The solution of these difficulties by the probe, however, was brought about in this instance by corroborating measures not usually resorted to, or fully appreciated *in this respect*. I refer to *traction upon the tumor* and to *rectal exploration*.

I regard these measures as scarcely second to the probe as a means of diagnosis in such cases, and especially where the patients are fat, and the abdominal wall thick. Traction upon tumors in the vagina is an old proceeding, and is usually done for the purpose of operating, but it is of importance in other respects.

The tumor in this instance was brought to the vulva for purposes of inspection, in order thereby to gain some definite information respecting its structure, to verify the previous examination made by touch, and to search for an opening into the uterus. The results gained from this have been stated before.

The value which I attribute to traction as a means of diagnosis has already been intimated, but I desire to call special attention to it as a method which cannot be over-estimated in such cases as have been considered in this paper.

TRACTION, when carefully practised, will give the following information:

If the tumor in the vagina is a polypus, attached to one lip, or by several points to the cervix, or if it be such an one as has here been described, the relation of the parts to each other, as they existed while *in situ*, will remain *unchanged* when brought to the vulva. If the tumor be an inverted uterus the relation of the parts to each other as they existed in the vagina will be greatly changed when exposed to view. The lips of the cervix

which surrounded the pedicle will have disappeared, having also become inverted, and along with it, probably, the vagina at its junction with the neck.

If the case be one of polypus, and partial inversion of the fundus at the point where the pedicle is attached, it will at once be revealed, whereby the errors cited by Denham and William Hunter may be avoided.

If the force used in making traction be steady, slow, and gentle, no lacerations of integral parts will ensue, or bad results supervene secondarily.

The operation of drawing the parts down is not usually difficult. When the tumor is very large it may be troublesome to manage, but otherwise it is not so. Vulsellum forceps are recommended for this purpose, and are good, but I regard the placental forceps, with blades which rotate, as much better. The blades can be made to dilate the vagina around the tumor, and will readily slide over the surface of the tumor and grasp it. If a stout pair be used, and the tumor fixed by its transverse diameter, its hold will be secure and there will be no slipping. The tumor having been brought without the vulva, and securely held there, the other means mentioned should be instituted, viz.: rectal exploration. The value of this means is only secondary to traction, because, to get positive information by rectal touch, the tumor must first be drawn down, otherwise the normal location of the uterus is almost beyond reach of the fingers. The parts being at the vulva, rectal touch will confirm the signs obtained of the presence or absence of the womb. To do this effectually the sphincter ani muscle should be temporarily paralyzed by forcible dilatation with the thumbs and two fingers introduced into the rectum, the ends separated, and the uterus searched for. If the uterus is not inverted it can easily be felt lying low down in the pelvis, and its entire surface examined, the traction holding it steady, so there can be no rolling.

If the uterus be inverted the fingers at once discover its absence, and will easily detect a ring made, either by one horn of the uterus or by the opening in the os. This procedure is much superior in obscure cases to other methods. It will confirm and corroborate the information gained by traction.

If, therefore, the relation of parts is not changed by traction, and rectal exploration reveals the uterine body in the pelvis, the probe should be made to pass whatever obstruction there may be at the neck. Force, however, I consider bad practice under any circumstances. It seems to me a far better way is to first make a narrow, longitudinal incision in the pedicle as high as possible, and through this opening introduce the probe. This should be done while the parts are at the vulva. If the probe enters to the proper depth the diagnosis is complete without *the shadow of a doubt*. The parts are then in position to receive appropriate treatment, and should not be returned until the operation is completed, whether it be for amputation or excision.

With these three means of diagnosis, viz., the probe, traction, and rectal touch, the difficulties of differentiation need no longer be formidable.

A few words, in conclusion, respecting the pathology of hollow uterine polypi—taking the one here represented as a specimen. I regret exceedingly that I was unable to submit it to a microscopist for examination. It was minutely examined, however, by the unassisted eye, and its grosser character studied several days after its removal. It was then considerably smaller than when *in situ*. In structure it was fibro-cellular, and covered by a thick mucous membrane. Its internal surface was composed of connective uterine tissue, with a few fibres of muscular structure. The walls were quite thick, more so in some portions than in others. It was least so at its fundus, where it measured about two lines, and gradually increased towards its attachment in thickness and density until it measured from four to five lines. The walls enclosed a single cavity, which had undoubtedly been continuous with the canal of the cervix above the point of attachment. This cavity had a capacity of 5 iss. liquid measure. The remainder of a few Nabothian glands were recognized in the walls just beneath the mucous membrane. Its surface was smooth and not lobulated or fissured. No blood-vessels of any size were observed, although some would no doubt have been seen under the microscope, as the mucous membrane enveloping the growth was in a state of hypertrophy. I am unable to say positively that the cavity in the polypus did not contain any fluid previous to its

excision. There were no evidences of this when examined, if

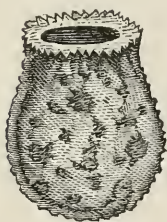


FIG. 2.

I except a small quantity of viscid mucus, which probably came from the uterus. There were no signs of coagulated blood within the cavity, neither was there any cheesy matter present. In several places of limited extent there was considerable hardness of calcareous nature. Upon its external surface there were small elevated spots, varying in size from a millet-seed to a large pea, which were fungoid, and had been one source of the hemorrhage. The surface was impervious. There were no openings leading to the cavity within. The appearance of the tumor after removal is represented by woodcut No. 2.

With respect to the formation of these extraordinary growths very little is known. Madam Boivin accounts for the one she describes, upon the theory that the uterus had become coated by some plastic material, had been ripped off except at its cervical attachment, and had become inverted by menstrual fluid collecting above.

The specimen exhibited by the late Dr. Henschel was examined by Dr. Noeggerath, who accounted for it in the same way as Madam Boivin.

The history of the case which I have reported appears to me to warrant a different conclusion from that just mentioned. It appears far more reasonable to suppose that it began as an exfoliation of the true mucous membrane of the body of the uterus, in fact was a remarkable case of membranous dysmenorrhœa. Some of the older writers, such as Dewees, Nægele, and Désormeaux, believed that the common forms of membranous dysmenorrhœa were cases in which the uterine cavity had become covered with plastic lymph from a diseased condition of the uterus which is now denominated endometritis. This theory is the same, no doubt, as the one upon which Madam Boivin based her opinion; but this theory is no longer accepted as true. The theory first instituted by Dr. Oldham, viz., that the membrane expelled in dysmenorrhœa is true mucous membrane exfoliated as a consequence of congestion and irritation of the uterus, is the one now generally accepted, and may be applied to this case. In this instance the invasion of the attack was sudden, the ex-

citing cause having been a straining effort to lift a heavy weight. The age of the patient at the time of the attack and the date at which the menses first appeared are sufficient grounds for believing that she was entering the climacteric period, and that the uterus previous to the attack was in a congested state, and was the predisposing cause. The exciting cause in this instance was the effort made in lifting, and the womb as a result was displaced and its mucous membrane at the same time forcibly detached to a very great extent of its surface, carrying with it more or less submucous and connective tissue. This view of the beginning of the exfoliation is made stronger from the fact that there was a sudden and considerable hemorrhage at the time in addition to the symptoms indicating displacement. The gradual progressive exfoliation of these tissues no doubt continued after this until the internal os was sufficiently dilated to admit of their extrusion into the vagina by the irritated body of the womb, and they were held at their attachment to the cervix, because the tissues there were too dense to permit further exfoliation. When the membrane was first expelled, which probably happened at least a year before it was removed, it is quite probable that it was perforated in many places and that these openings closed as the tumor became hypertrophied, or, rather, were filled up by a new tissue, which corresponded with the vascular spots of fungoid character, already alluded to.

The predisposition of the uterus to polypoid growths about the time of the climacteric period is conclusively shown by Dr. Tilt in his work on Change of Life, in which he embodies in a tabular form his own and Dupuytren's experience, embracing the history of fifty-seven cases. Of this number, twenty-three occurred in women between the ages of forty and forty-nine. This is favorable to the views expressed respecting the beginning of the exfoliation of the mucous membrane. I have not been able to gather any information fixing the ages of those patients operated upon for hollow polypus, except Mme. Boivin's case, in which the patient was 44 years and married, and my own patient, who was 49. It is not unreasonable, however, to infer from correlative statements occurring in the histories of the other three cases, that they also were between the ages of 40 and 50.

Hollow polypi are a variety entirely distinct from all others. There are some other kinds which somewhat resemble them.

"The channelled polypus" of Dr. Oldham, which he describes in *Guy's Hospital Reports*, April, 1844, is something like them, but a close examination and comparison of that tumor, as it is there represented by a woodcut, with the one here described, will at once show their dissimilarity.

There is no similarity between hollow polypi and the cystic polypi which Dr. Lee has described. There may, however, be some analogy between these polypi and the one reported by Mr. Langstaff in vol. 17, *Med. Chirurgical Trans.*, in which there was a small cavity filled with cheesy matter and hair. Still its structure and mode of attachment were different.

Hollow polypi I would account for as the result of complete exfoliation of the entire uterine mucous membrane, inverted and expelled into the vagina by the womb except at its attachment, where it is held and nourished by the cervical blood-vessels, which cause its further development.

44 WEST TWENTY-THIRD STREET.

THE USE OF OPIUM AND MORPHIA DURING PREGNANCY AND PARTURITION.

BY

EDWARD L. PARTRIDGE, M.D.,
New York.

THE influence upon the fœtus or newly-born infant, of narcotics when administered to the pregnant or parturient woman, has recently attracted such general attention that I have referred to my obstetric register, and am able to produce therefrom some facts bearing directly upon this subject in eleven cases.

During the past three years, I have preserved very full records of all events relating to obstetric cases; still, as my attention has not been especially directed, until recently, to a practical view of the subject, doubtless morphine and opium

have been administered in other cases than those in which a note of the amount and time of administration has been kept. At the close of this report, therefore, a brief allusion to stillbirths, to cases of difficult resuscitation, and to such children as displayed unusual symptoms for a time after delivery, will be admissible, in order to demonstrate to what extent the use of morphine or opium may be held responsible in these unpleasant terminations of labor.

In the histories of the eleven cases which are here recorded, the amount of morphine or opium administered in each case, and the facts relating to the time or times of administration, are accurately stated, each record having been made immediately after the corresponding confinement.

CASE I.—Tedious labor, with very rigid os uteri. Membranes ruptured and liquor amnii escaped two hours before distinct labor-pains occurred. Employed Magendie's solution of morph. sulph., $\mathfrak{Mxx.}$, by mouth, in three doses during the day of delivery. Child born at 11.30 P.M., weighed eight pounds, was active at and after birth, and no measures were required for the relief of suspended animation.

CASE II.—Mother had five uræmic convulsions, one occurring previous to delivery. $\mathfrak{Mx.}$ of Magendie's solution was administered subcutaneously one hour previous to birth of child, which weighed eight and a half pounds, and exhibited no evidences of asphyxia. It is recorded that the child presented no unusual symptoms from the time of its birth. The mother recovered.

CASE III.—Mother had eleven uræmic convulsions, three seizures taking place previous to delivery. $\mathfrak{Mxij.}$ of Mag. sol. was given subcutaneously one hour before birth of child. The child, which was rapidly delivered by the forceps, weighed seven and one-half pounds, and was vigorous. Five minutes elapsed before normal respiration was established, and it was watched with interest during twenty-four hours following confinement. No peculiar symptoms appeared. Mother, a primipara, recovered.

CASE IV.—Patient had moderate albuminuria during three weeks previous to labor. During labor she had headache and nausea. Mag. sol. $\mathfrak{Mxvi.}$ was given in two doses, subcutaneously, during the five hours preceding the birth of the child. No asphyxia in child, which weighed eight and a quarter pounds. No unusual symptoms subsequent to labor.

CASE V.—Convulsions, coma, and death of mother. Just as the os was dilated, patient exclaimed that she could not see. Having ascertained this to be a fact, the forceps was applied within the uterus, and in fifteen minutes the child was delivered (the mother being a primipara). The first convulsion of the mother occurred

fifteen minutes later. As uræmic seizures had been apprehended in this patient, ℥xviiij. of Mag. sol. had been administered during the morning of the day of delivery, the birth taking place at 3 P.M. The child was small and poorly nourished, but inflated its lungs immediately after birth. Two hours elapsed before respirations were perfectly normal and full. It exhibited no tendency to sleep. The first urine which it passed was very dark-colored. After respiration was normally established the child did well.

CASE VI.—First stage of labor continued several days—from Oct. 6th to morning of the 13th inst. Pains never absent for an interval of more than two hours. "Morphine or opium administered daily during first stage of labor." Child was born during absence of physician, and when seen later was doing as well as usual, no measures for the relief of suspended animation having been resorted to. Weight, eight pounds.

CASE VII.—Delivery accomplished at 5.45 P.M. On morning of same day, patient took by mistake gr. ss. of morphine and gr. i. of opium, with an interval of only one hour between the two. A profound narcotic effect was produced upon the mother. Until the occurrence of the last five pains she would fall asleep in every interval of rest. No efforts for resuscitation of the child were necessary, and it manifested no unusual symptoms during the following night.

CASE VIII.—Membranes ruptured when os was undilated. Pains of stage of dilatation were very severe and frequent. Mag. sol. ℥xi. was administered by mouth, at 8 A.M., ℥vi. at 11.30 A.M., and ℥vi. at 2.30 P.M. Child was born at 6.30 P.M. The funis, which was thirty-eight inches in length, prolapsed beside the shoulder of the child, and ceased to pulsate. Five minutes were occupied in establishing normal respiration, after which time the child appeared bright, requiring no special attention.

CASE IX.—Membranes ruptured when first distinct labor-pain occurred. Child was born at 2.30 A.M. During the night previous to the birth of the child, and during the preceding day, gr. iss. of morphine was administered. Child cried upon its expulsion, and exhibited every evidence of vigor during the following twelve hours.

CASE X.—Premature rupture of membranes. ℥xi. of Mag. sol. administered three hours previous to birth. Child strong. No unusual symptoms following birth.

CASE XI.—Child born at 10 P.M., April 15th. At 10 P.M., April 14th, ℥xiiij. of Mag. sol. was given to mother, without in any way affecting fetal movements. Child was unusually vigorous at and subsequent to birth.

In none of these cases was resuscitation of the child at all difficult, nor did any of the children exhibit evidences of narcosis at or following birth.

Before the enumeration of the above cases, we said that doubtless other patients had received morphine or opium during pregnancy and labor besides those about whom it was *recorded* that the drug had been administered; and in order to make the analysis of my cases more complete, an account of the causes of all still-births which have occurred among them would not be out of place, as well as a statement of the conditions occasioning asphyxia in the newly-born, and of those also which occasioned sickness or death of children soon after their birth. During the past three years there have been fourteen still-births in the recorded cases on which this paper is founded, resulting: in one case, from syphilis; in one, from craniotomy; in two, from prolapse of the funis; in two, from deformed pelvis, no narcotic having been employed during pregnancy or labor; in two, from premature birth at end of sixth month of gestation; in one, from a justo-minor pelvis, an R. O. P. position, and the use of forceps, no narcotic having been used during pregnancy or labor; in one, where the mother was seriously sick with pleuro-pneumonia; in one child which was a prematurely-born twin; and in three cases in which the children had been dead for some time without any perfectly clear reason for foetal death. In all of the latter cases, however, the administration of opium or other narcotics during pregnancy can be eliminated from the possible causes, as I am aware that none had been taken by the mother.

Among five cases of difficult resuscitation, the asphyxia was occasioned by the prolonged second stage of labor, with use of the forceps in two; from compression of the cord in breech cases, in two; while one child was premature, having been born at the end of the seventh month of utero-gestation. In the two cases in which the forceps was used, no morphine or opium had been administered during labor.

Feebleness and death is apparent in the records of the first two weeks of existence of eight children. In one child, from imperforate rectum; in one, from syphilis; in one child death resulted from convulsions when two weeks of age, no narcotic having been administered during or after labor; in two children which were prematurely born at the end of seventh month; while in one, the reason of its death was not evident,

as it occurred fifteen minutes after birth, before any physician arrived. No morphine or opium had been administered in the case, which was under the care of the nurse.

The very great *practical* importance of a knowledge of the extent of the influence upon the fœtus, or newly-born infant, of drugs, especially narcotics, when administered to the woman with child, should occasion the closest observation on the part of the obstetric practitioner, until a thorough comprehension of the subject is obtained.

FOOD AS A MEDICINE IN CASES OF UTERINE FIBROIDS.

BY

EPHRAIM CUTTER, M.D.,

Cambridge, Mass.

WHEN the writer, at the late Chicago meeting of the American Medical Association, brought forward the use of galvanism in the treatment of subserous uterine fibroids, he was careful to state that it was *a* means, not *the* means, of treatment. It was left to be inferred that there were *other* methods. One of these is their treatment by animal food diet. To this he would now call attention, namely, the use of certain articles of food as a medicine for these structural lesions.

For the idea the writer is indebted to Dr. J. H. Salisbury, of Cleveland, Ohio. He regards these growths as prominently due to the excess of carbo-hydrates, starches and sugars, fermentable food in the diet, that they are largely disorders of nutrition, and that by feeding patients on a diet composed of animal food, the condition which was most active in bringing on the diseased results is removed and the system enabled to right itself by its own recuperative power. This paper is not intended to discuss causes, but the writer would simply say that there is much truth in this view. Good food is a powerful factor in good health, and "diet is a lost art," as a physician lately remarked. However, to use a homely phrase, "The proof of the

pudding is in the eating," and the writer respectfully submits the facts of a few cases as proofs of this position. He honestly thinks he is correct in his impressions, and wishes also to justify some remarks in a contribution of his to gynecology, which a late reviewer in the London *Medico-Chirurgical Review* alluded to as chimerical.

Moreover, in evidence that animal food affects favorably the physical conditions of the blood in disease (which blood is the pabulum of all the tissues), two microphotographs of blood have been prepared. One of these is a photo of a patient in the second stage of a tissue-wasting disease, and the other a photo of a similar case who had been on the diet named for three months. There is a marked and evident clearing up of the morphological appearances of disease.¹ These are: (a) reduction of white corpuscles to normal size except in *one* instance; (b) reduction of the *number* of bodies, called for the time being *spores*; (c) absence of *mycelial* filaments. Those who disbelieve the theory or nomenclature must admit the improved physical condition of the blood as shown by the photos, as it is as palpable to the eye as that 1 is less than 3. They are not singular and exceptional cases in my own practice.

CASE I.—A middle-aged married lady, residing near Peterborough, N. H., was the patient of Dr. Cutler of that town. This gentleman some years since called my attention to this case as being a fibroid suitable for galvanism. According to his description—and he is an intelligent and careful observer—the growth was hard, large, and abdominal, and of several years' standing. There were severe and copious metrorrhagias, general malaise, exhaustion, and greatly reduced condition of general health.

It is possible, but not *probable*, that there might have been a mistake in the diagnosis, as three-fourths of the cases of female abdominal chronic tumors are fibroids, and when associated with hemorrhages, a much larger proportion.

Arrangements were made with physician and patient to visit Boston for the purpose of having galvanism applied if deemed advisable a month later. Meantime, in order to prepare for the operation, on the principle that it is useless to apply stimuli to an enfeebled system—to give the whip when the horse needs provender—the patient was put upon the strict diet for convenience printed as follows:

¹ These microphotos may be seen on application to the writer.

STRICT DIET.

Eat Animal Food.

BEEF STEAK.	Cucumbers.
Sirloin Steak.	Lettuce.
Porter House Steak.	Dandelion.
Roast Beef.	Parsley.
Corned Beef.	Cowslip.
Cold Pressed Corned Beef.	Radish.
Smoked and Dried Beef.	Horse Radish.
Beef Tongues.	Cranberry.
TRIPE.	Turnip.
Ox-tail Soup, without Potatoes.	Rhubarb.
Veal.	Squash.
Calves' Feet and Head.	Carrot.
Pork, Fresh, Salt, and Corned.	Pickles.
Pigs' Feet and Head.	Sour Fruits.
Sausages properly made. Ham.	Apple.
MUTTON.	Pear.
LAMBS' TONGUES.	Melon.
Venison.	Nuts.
Turkey.	Irish Moss.
Game.	FISH, Salt and Fresh.
Chicken.	Fresh and Oregon Salmon.
Geese.	Cod.
Pigeons.	Haddock.
SQUABS.	Eels.
MILK.	Seup.
BUTTER.	Perch, etc.
EGGS.	Oysters.
CREAM.	Scallops.
Cheese.	Shrimps, etc.
VEGETABLES without or with little	Halibut.
starch.	Trout.
Cabbage.	Sword-fish.
Tomato.	Cusk.
Celery.	Lobsters.
Onion.	Clams.
Spinach.	Tongues and Sounds.

AVOID

STARCHES and SUGARS.	Sweet Potatoes, etc.
COMMON WHITE FLOUR in all and	SUGARS.
every form, viz. :	Corn Starch.
Bread. Biscuit. Cakes, all kinds.	Arrowroot.
Crackers. Wafers. Dough-	Sago.
nuts. Puddings. Gruels.	Tapioca.
RICE, etc.	CANDY.
POTATOES in any shape or variety.	

The time of appointment came. The patient did not appear. This circumstance reported to Dr. Cutler produced a reply something like the following: "Dear Dr.: Mrs. ——— tried the diet faithfully, and when the time came to go to Boston, as agreed, found her tumor diminished one-third in size, and she thought there *was no need of an operation.*"

The writer thought so too, pleased to find that so good a result was obtained by so simple means in the brief space of a few weeks.

CASE II.—In September, 1875, a case of multilobar fibro-myoid came under the charge of the writer. The patient was forty-four years of age, single, in feeble health, an invalid for many years. She had no hemorrhages, but was afflicted with constipation, abdominal pain, dyspepsia, and weakness. Menses were regular. In the right hypogastrium there was a large lobe, hard and smooth as a cobble-stone. It was the seat of a great deal of pain, night and day. Two or three lobes of the same density and roundness filled the pelvic cavity, and crowded the uterus up behind the pubis. In this position it was strongly retroflexed and distorted. The growth so occupied the pelvis as to leave but little spare room for the viscera. Circumstances forbade the use of galvanism, and the strict diet was adopted, solely with a view to reduction of tumor. Being a woman of rare firmness of mind and resolute will, combined with implicit faith in her adviser, she adhered to it faithfully for the space of nine months. At this time the tumor had become sensibly reduced in size in both the abdominal and pelvic portions. The pain was removed. Flesh and strength improved, and altogether, for such an unpromising case, the result was more than could be reasonably hoped for. It was then decided, as circumstances favored, to apply galvanism, in the hope of yet further improvement. An application of *fifteen* minutes' duration was made; one electrode introduced through abdomen and one through the rectum. Remarkable results of an unusual character followed, but as this portion of her history is foreign to the subject, it will be given elsewhere.

The fact of the arrest and partial reduction of the fibroid by animal diet was proven sufficiently by this case.

CASE III.—In December, 1875, Mrs. R., of Cambridge, Mass., was suddenly seized with a severe attack of alarming copious uterine hemorrhage. It was consequent upon over-exertion. She was forty-eight years old; mother of four children; small in size, pale, thin, somewhat nervous; a hard worker withal—one of those remarkable specimens of industry that would be more remarkable if not so often found in New England homes. On physical examination, the abdomen was found to be occupied with several hardish lobes somewhat painful to the touch. They were clustered about the lower part of the abdomen. There were also some suspicious lobes in the region of

the liver. The vagina was found to be occupied by a large intra-uterine fibroid. The os uteri was dilated, annular, and about two inches open diameter. The finger could be readily swept around the tumor, finding a solid juncture between it and the uterus, an inch or two within the os. The presenting surface of the fibroid was rotund, soft, spongy, and cribbed, with blind cul-de-sacs that appeared to be the points of exit for the hemorrhage. The animal diet, with quinine and tonics, was heartily adopted. Subsequently, Dr. Morrill Wyman, of Cambridge, saw the patient in consultation, and decidedly advised against an application of galvanism, as the case had such a malignant look. A bad issue might bring the operation into disrepute. It appeared to him more like a case of cancer than anything else. There was much to sustain this view in the systemic and local symptoms. The strict diet was continued. The result has been an arrest of development, of hemorrhages, restoration of bloom and color of health to the cheeks. The whole general appearance has improved *pari passu* with the local benefits. The tumor has diminished, as evinced by the condensation and hardness of the uterine portion, by the filling up of the cul-de-sacs, and by lessened size. She attends to her duties in the household, likes her diet, and altogether enjoys better health than for many years. Her constipation is relieved by the use of St. Leon's Spring water, an experience confirmed by other cases. Her diet previously had been mainly starches and sugar.

CASE IV.—Mrs. M. E. C., aged thirty years; resides in Woburn, Mass. Four children; age of youngest child, ten months. Always enjoyed good health. At the birth of last child nothing was noticed out of the way with the uterus. The labor was natural and easy. January 1, 1877, she was seized with severe uterine hemorrhages, which continued more or less up to April 1st—the date of my first visit. Found her condition one of suffering from loss of appetite, blood, color, flesh, and strength. She had been confined to her bed for sixteen days previously. Temperature of body ranged from 100° to 102°. Cough, night-sweats, no severe chills. No physical signs of trouble with the lungs. No abdominal tumor. Diarrhœa, thin and watery. Rectal tenesmus. General health very bad, and running down rapidly.

Examination per Vaginem.—Os uteri pushed up under the pubis. Uterine cavity three inches deep. Direction normal. Behind and continuous with the uterus, an obovoid, elastic, semi-solid, fixed mass was felt. When the sound was introduced into the uterus, it elevated the tumor by uplifting the womb. Per rectum, the tumor felt large as the closed fist and spongy.

Diagnosis.—Myo-fibroma because of the hemorrhages, of attachment to, and incorporation with, the uterine tissues, and also on the general principle that three-quarters, if not nine-tenths, of all tumors connected with the uterus are fibroid.

Treatment.—Strict diet, quinine, ale, and aromatic sulphuric acid

baths. The question of galvanism was discussed. It was thought that it had better be deferred for the present.

April 4th.—Much better. Eats animal food well. Uses a Cutter invalid chair with much relief. No hemorrhage. Advised liq. ferri persulphatis, U. S. P., should hemorrhage recur. She thought the quinine made her sweat at night. Last night it was discontinued, and no sweats occurred.

A vaginal and rectal examination confirmed the diagnosis. The tumor seemed smaller and less punky.

Advised the mixed diet as follows, to be used sparingly as a side issue, when the strict diet was distasteful to the palate:

MIXED DIET.

Same as the Strict Diet, adding the following:

Wheat Whole.	RYE.
Wheat Cracked.	Rye Meal.
Wheat Steamed.	BARLEY.
Wheat Crushed.	Barley Meal.
Wheat Meal baked like Oatmeal.	INDIAN CORN. Meal. Maize.
WHOLE WHEAT ATTRITION FLOUR.	Hulled Corn.
ARLINGTON WHEAT MEAL.	Hoe Cake.
CARR'S GRAHAM FLOUR.	Indian Pudding.
Wheat Bread. Biscuit. Cakes.	Hasty Pudding and Milk.
Crackers. Doughnuts. Pies, etc.	Buckwheat.
Groats.	Beans, baked, stewed, steamed, or
Oatmeal.	boiled.
Hulled Oats.	Peas, baked, stewed, steamed, or
Cracked Oats.	boiled.

April 12th.—Visited her with the battery, prepared to use it. Found the patient sitting up and dressed. Now likes her meat very much, and lives on the strict diet. Has found the chair very useful indeed. On examination the tumor was found to be diminished one-half in size. It was more compact, movable, and pointed. Temperature 99°. No medicine. Galvanism indefinitely postponed, as it was not needed.

April 25th.—No tumor felt on palpation or seen with the speculum. General appearance and health very much improved. Night-sweats gone. Appetite good. Up and about the house. Walked out to my carriage to speak with my wife.

May 5th.—Dr. W. S. Brown, of Stoneham, Mass., a skilled gynecologist, and Dr. J. M. Moore, of Woburn, Mass., the family physician, with myself, examined the patient, and were unable to detect any tumor. General health restored.

CASE V.—In August, 1875, Miss ——— was brought to my attention by Dr. J. M. Harlow, of Woburn, Mass., as possibly a fit subject

for galvanism. She had suffered severely from hemorrhages, menstrual and intermenstrual, so that she was blanched, thin, weak, and feeble, although she was able to be about the house. On examination the abdomen was found to be occupied from the umbilicus downwards by a central, round, dense, and unyielding tumor. It was not very movable. There was no wave on palpation, but dulness on percussion. The uterus could not be felt in the vagina, and there was no evidence of any tumor in the pelvis.

From the weakened condition of the patient, it was advised not to have the operation of galvano-puncture at present, but to use the strict diet as a preliminary measure. It should be stated that her diet previously had been flour preparations mostly. The change was heartily and thoroughly adopted. It was soon followed by marked improvement. The abnormal hemorrhages ceased. The appetite and strength improved. The tumor began to diminish, so that in nine months' time from the adoption of the *strict diet* the tumor could not be detected. A few months subsequently, however, by a careful examination with all clothing removed and loosened, dorsal position, knees drawn up, a mere nodule of a little globar mass the size of an English walnut was, after some searching, discovered. Since then it has not increased. She enjoys good health, much better than for years. Pursues her occupation as a clerk in an insurance office. She adheres to the diet and finds flour and its preparations very unpalatable and distressing, when forced by circumstances to partake of it. Rather than eat flour, she was known to have left a social church entertainment just before supper-time.

This case has been regarded as a mere coincidence; but taken in connection with the others and the known marked improvement that almost invariably follows the adoption of the strict diet, that view is improbable.

CASE VI.—Mrs. B., aged 34, married, no children. Father and mother both died of consumption. She herself, in 1864, was pronounced by Dr. H. I. Bowditch, of Boston, to have the same disease dangerously. Still, as she came of a family that was very tenacious of life, and was possessed of an indomitable will, she managed to live passably for most of the time on ordinary treatment. In 1872, she discovered that there was an enlargement at the lower part of the abdomen. Her physician examined and pronounced it to be due to fibroid uterine growths that would destroy her life. In January, 1874, she came under the care of the writer and was put upon the Salisbury plan for consumption. In October, 1874, she became pregnant, and as the uterus developed the tumor became more manifest, and its presence was discovered by the writer, as the patient had from motives of false delicacy concealed its existence. It appeared as a *chain* of six tumors traversing the abdomen from side to side. The skin was very thin and the physical characters of the tumors

quite prominent. The largest tumor was of the size of a goose egg. They were moderately hard, movable, painless, and attached to the anterior surface of the enlarged uterus. They occasioned no trouble but from the anxiety caused by their presence. In due time a healthy, vigorous child was born, who continues so up to the present time. In two months after the birth of the child the tumors entirely disappeared and never recurred. The mother had a plentiful lacteal secretion and considered herself well enough to assume household and church-fair duties, against the advice of the writer and others. They *killed* her. This is not a hard expression, for there is no doubt, from experience derived from other cases, but that, had she obeyed the instructions as to exertion and duty, she might have been alive to-day, humanly speaking.

Although the dissidence of the tumors was an incidental effect, still as the strict diet is that employed for this purpose as well as for tuberculosis, the history illustrates the value of food as a medicine in the treatment of uterine fibroids.

CASE VII.—Mrs. Dr. W., aged about 34 years, is a healthy-looking woman of good proportion, fair size and blonde complexion. When seen in December, 1876, she complained of great distention of the abdomen, caused by a large tumor, which had existed seven years, and had continuously gone on without any relief from advice or treatment. For the first few years she suffered much from pain in the bowels. Now there is none. No children, though eight years married. Her general health was good, but she suffered much from the discomfort and anxiety about the abnormal enlargement of her person. On examination the abdomen was found occupied by a large, multilobar, hard, movable tumor. There was at this time no fluctuation. In the pelvis it presented the same characters, while it pushed the vaginal wall downward, so that there was a prolapse. The uterus could not be felt in any posture of the body. Bowels constipated. Menses painful and scanty.

Diagnosis.—*Fibroid.* This was the opinion of most of the physicians who had examined her, including her husband, Dr. Gilman Kimball, of Lowell, and Dr. Brown, of Stoneham, Mass., except Dr. D. H. Storer, of Boston, who had diagnosed an ovarian cyst many years before. Still, as Dr. Salisbury informs the writer that he has cured several cases of ovarian tumor by this same process, it is all one matter as far as relates to treatment. (I would here remark that I have seen one of Dr. S.'s cases of ovarian cyst that was reduced by the strict diet.)

December 6, 1876.—Mrs. W. went upon the strict diet as a remedy.

December 20th.—Reports abdomen diminished one and a half inches. Matters have much changed as to physical signs. Some medium-sized lobes of a semi-hard character were felt in the abdomen. On

the right side there is a large fluctuating cyst extending from the cartilages of the ribs to beyond the umbilicus on the left, and downwards into the pelvis and into the prolapsed portion of the posterior vaginal wall. Bimannual examination detected a distinct wave and fluctuation from vagina to epigastrium. This seemed inexplicable and her husband was not convinced of there being any cyst. Still it is the history as I found it. She says the painful distention is lessened. Complaints of frequent micturition and bearing down. She dislikes her diet, yet adheres faithfully to it. Takes no other medicine. Uterus not felt.

December 28th.—Has lessened two and a half inches in size. Continues diet. Appetite good. Examined in the standing posture, the uterus can be easily felt. It was found pushed up beyond the pubis. This was the first time the uterus could be detected in my examination during the progress of the case.

May 5th.—Diminished six and a half inches.

May 13th.—Is down to natural size. When last unwell, had a *painless menstruation*. Abdomen tympanitic throughout, except over the hypogastrium, where a movable solid mass is felt connected with the uterus. Os uteri large and patulous; felt in any position of the body. Motion communicated to uterus affects the abdominal tumor.¹

For the first two weeks of diet treatment she began to grow smaller. Softening followed, and about five weeks ago there was a sudden collapse in size.

Notwithstanding the obscurity of some of the symptoms and the doubtful nature of the diagnosis, that might have been cleared up somewhat by the use of the aspirator, still the case is instructive when taken in connection with the others. There was a decided, marked, and an incontrovertible change for the better. Menstruation has become painless and natural. The distress and trouble have all passed away. The abdomen is no longer enlarged. The patient may practically be considered as restored to health.¹

Suppose the case *was* a fibro-cyst combined with ovarian tumor (which no one could positively tell unless gastrotomy were performed), it in no way diminishes the value of the history. The facts are as stated. The report is historical to the latest sources of information. The future is yet to be written. When the simplicity and innocence of the means used are considered, the results recorded are surprising.

¹ Latest examination finds a still farther diminution. Tumor just perceptible in the centre over the pubis.

If seven cases of fibroid tumors can be arrested and diminished by diet, it is probable that these are not mere coincidences. If so, there is much reason to congratulate the patients.

One thing is certain: the diet treatment is beneficial to the general health and to the blood, as proved by microphotography.

10 ROSELAND STREET, June 16, 1877.

CONGENITAL OCCLUSION AND DILATATION OF LYMPH CHANNELS.

BY

SAMUEL C. BUSEY, M.D.,

Washington, D. C.

Prof. of the Theory and Practice of Medicine, Medical Department of the University of Georgetown; one of the Physicians to the Children's Hospital; Physician to the Louise Home.

(With 42 woodcuts.)

(Continued from July number, page 446.)

THE tumor observed by Petters (Case No. 54, *New Orleans Med. and Surg. Jour.*) in the right inguinal region of his patient, equalled in size a small apple and resembled a hernia. It "felt like a conglomeration of ascarides—like rebounding cords, which upon pressure with the finger became softer and more flaccid. Petters regarded this anomaly as a "venous plexus," but it consisted of the "glands of the right inguinal region transformed into cysts, of small walnut-size, filled with wine-yellow fluid. From the inner wall of these cysts, trabecular projections extended into the cavity, and it was possible to enter two dilated lymph-vessels, of crow-quill size, which connected the cysts with one another, so that a dilated vas efferens and afferens could be seen in each cyst. Upon puncture a yellowish fluid spouted from these cysts in a jet of several inches. Lymph-vessels and cysts together formed a conglomeration which it was difficult to unravel. The lymph-vessels in the vicinity and the thoracic duct showed considerable dilatation."

This case was complicated with stenosis of both auriculo-ventricular orifices, enlargement of the heart, œdema, ascites and cirrhosis, and it does not seem possible to have correctly diagnosed the true nature of the inguinal tumor, which was only recognized after paracentesis.

In Amussat's case death speedily ensued, preceded by violent symptoms, which developed suddenly after a fatiguing walk; in Nélaton's, death followed, in a few days, an operation; and in Trélat's, it followed an operation for fistula in ano, unaccompanied with any trace of redness or inflammation about the wound, without erysipelas or any appearance of angiolencitis. In these cases, as also in those of Fetzner and Petit, the tumors had been mistaken for hernial sacs. It thus becomes important to differentiate them from herniæ. Gjorgjevic asserts that lymphangiectatic tumors may be confounded with reducible and irreducible tumors. Among the latter may be classed cold abscesses, cysts, and lipomata, which develop very slowly, like lymphangiectatic tumors, but from which they differ by their reducibleness, transparency, and indistinct feeling of fluctuation, resembling that of lipomata, but quite distinct from that of tumors containing fluid. Softness is a characteristic of lipomata, but the latter are fixed. They may be compressed, but not reduced. Lipomata are rarely developed symmetrically (Trélat), whilst the inguinal glands may be affected upon both sides. Of the reducible tumors they are most frequently mistaken for herniæ. Both, says Gjorgjevic, develop slowly; neither change the appearance and character of the covering integument; both increase in size during exercise and continued maintenance of the erect posture, and both usually recede in the horizontal posture. In the latter position, however, the hernial tumors do not recede unaided, but the glandular tumors do. Aime-David insists that the existence of a dilatation of the lymphatic-vessels of a neighboring part would be presumptive of the character of the tumor. Drinkard invites attention to the differing compactness and consistency of the parts of the tumor in his case, and to the absence of any impulse on straining or coughing, the invariable size of the tumor, and history of the case, as sufficient to prevent a mistake in diagnosis. But in case 62 the history was suggestive of the presence of hernia, for the tumor in the right groin developed during violent exertion,

and in case 69 the tumors developed gradually, were reducible at pleasure, and protruded immediately upon removal of the compressing appliances. In the debate which took place before the Surgical Society of Paris, when M. Trélat first presented his patient for examination, M. Verneuil "gave the opinion that the deep and intra-abdominal lymphatic vessels were dilated, and had perhaps been the point of the departure of the disease," which opinion was verified by the autopsy, but M. Trélat, in his report of the case, does not give the reasons which enabled Verneuil to arrive at so accurate a diagnosis. No reference is made, in any of the reports of the cases, to percussion as a means of diagnosis. But, perhaps, the only conclusive test must be derived from aspiration. The presence of a fluid, presenting the chemical and microscopical characters of lymph, would settle the diagnosis. A lobulated feel, or the sensation of a congeries of twisted cords, unattached and movable under the skin, or the continual presence of a swelling around the truss, as in Trélat's case, which enlarged when in the erect position, should excite a doubt as to the hernial character of the tumor. The case of Fetzer (65) presented concomitant phenomena which should remove all doubt as to the correctness of a diagnosis.

CASE LXV.¹—A girl, 16 years old, had, besides a double femoral hernia which had existed since her eighth year, upon her abdomen a ribbon-like stripe, commencing one inch below the navel, to the left of the linea alba, continuing to the left and upwards, and passing between the false ribs and the ileum, proceeding thence, becoming lighter in color and narrower, as far as the vertebral column. Upon this band, anteriorly upon the abdominal walls, one inch below the navel and two lines from the linea alba, was a conglomeration of several, perhaps eighteen, wart-like tumors, from the size of a male to that of a female nipple, and of the same color as the surrounding skin. They were painless, flaccid, could be pressed into the abdominal walls, but rose upon the removal of the pressure. From two of the protuberances a milk-like fluid exuded continually, drop by drop. The flow issued from a small red spot in the centre of the tumors, was increased by pressure upon any of the unruptured bodies. After standing a short time the fluid separated into a milky, turbid serum, rendered clear by ether, and a brighter, milky, large coagulum, which reddened upon exposure to the air. Fetzer removed with the scissors one of the protuberances, which was formed by a thinned cutis, and immediately from the opening issued in a stream a considerable quantity of

¹Fetzer, Arch. f. Physiologische Heilkunde, 1849, p. 123.

the milky fluid, which was followed by great debility, languor, and a feeble pulse. The entire band was thickly studded with minute raised points. Into the opening, artificially made, a probe could be passed to the depth of one inch. Chemical analysis of the fluid by Prof. Köstlia, and microscopic examination by Prof. Schlossberger, proved it to be lymph.¹

The history of the above case is incomplete, and, consequently, the true nature of the hernial tumors must remain in doubt, but the probability is they were similar to the masses of dilated lymphatic vessels found in cases 61 and 62. If such was their character the coincident diseased condition of the lymphatics of the abdominal wall becomes an important aid in determining a correct diagnosis. Not that such a condition is necessary to exclude the existence of true hernia, but that the concurrence of tumors resembling herniæ and dilatation of the lymphatic vessels of the abdominal parietes would determine the lymphatic nature of the tumors. This view is confirmed by the phenomena presented in the case of disease of the lymphatics of the abdominal integuments, with occasional discharge of large quantities of chylous urine, reported by William Roberts, which, so far as I know, is the only case on record, though not claimed to be congenital, that exhibits an analogous condition of the abdominal walls.

It is perhaps not possible to diagnose such a condition of the lymph-vessels as was found in the case of Amussat, yet it is more than probable that the mistaken nature of the inguinal tumors, and the unfortunate application of the hernial truss, set up the inflammatory conditions which proved fatal. The acute symptoms were not unlike those present in the case reported by Graves and Stokes (No. 17, *N. O. Med. and Surg. Jour.*), in which the painful swelling in the left iliac fossa, mistaken for fecal accumulation, proved, on post-mortem examination, to be

¹ The congenital origin of cases 50, 52, and 65 is somewhat doubtful, but the probability of some congenital defect of formation either of the glands or vessels is so strong that I have so classed them. Binet insists that the phenomena in Fetzer's case were due to a congenital lesion of the plexus of origin of the superficial tegumentary vessels. Billroth says congenital occlusion played an important part in producing the disease in Thilesen's case. Carswell (*Patho. Anat. Art. Hyper.*) expresses the opinion that the dilatation in Amussat's case was a malformation. The case is frequently referred to as Carswell's, but incorrectly.

a mass of devastated lymph-glands and dilated lymph-vessels, which communicated with the thoracic duct.

CASE LXVI.¹—W. R., aged 45, admitted to the Royal Infirmary, Sept. 21, 1868. Two years previously he began to suffer from a succession of abscesses; one appeared on the buttock, another on the right breast, a third in the left groin, and a fourth in the right iliac region, two inches from the middle line, and midway between the horizontal level of the umbilicus and the pubis. The last formed



FIG. 36.

opened and refilled several times. After all had healed, he noticed a scab over the site of the fourth, which he removed, and immediately a pale, watery fluid, like gum-water, began to exude, and continued until several pints were lost. At this time he observed a number of transparent vesicles, not larger than pins' heads, scattered over the abdomen, occupying the hypogastric region from the umbilicus to the pubis, extending considerably more to the right than to the left of the middle line, thickest near the centre of the hypogastrium, and smaller

¹ Roberts, Manchester Med. and Surg. Repts., Vol. I., p. 104, 1870.

and more sparse towards the confines of the affected region. A cluster of large vesicles is situated near the umbilicus, and another larger cluster is near the upper and right external limit, as shown in Fig. 36.

Some of the groups contain three or four, others eight or ten, vesicles, closely aggregated together. Some are so small that they are just visible. Most of them are hemispherical, but some are oblong or irregular, as if two or more had coalesced. In the smaller vesicles the membrane is transparent, without a trace of organization, their opaque white contents shining through them like drops of rich milk; but a few of the largest are distinctly marked by meandering lines of delicate blood-vessels, giving them a faint rose color. They varied in color and fulness—the whiter the more distended, and when pale they were flaccid. The color was also affected by the state of the patient's health, and by the digestion and assimilation of food; when feverish they were pale, but when the appetite and sleep returned they became milky and turgid. As his health finally declined the milky appearance became less marked, and in the last week of his life they became permanently pale and flaccid. They were paler in the morning before breakfast, after the prolonged fast of the night. Soon after breakfast they began to grow fuller and whiter, which increased through the day and attained its maximum about eight hours after dinner. The discharge followed the same rule. When a vesicle was gently pressed it immediately emptied, its contents escaping into deeper parts, but returning as soon as the pressure was removed. They did not communicate with each other, but after a copious discharge all became empty.

The skin over the affected area was thickened, soft, and of a dull red color. The dull red area extended beyond the limits of the vesicles. Around the larger vesicles and groups of vesicles, the skin was raised into soft, nipple-like elevations, and was spongy.

The discharge, which sometimes was equivalent to eight ounces per hour, was always, whether milky or opalescent, essentially the same. After standing it separated into a clot and serum; coagulated with heat and nitric acid. When shaken with an equal bulk of ether the white appearance disappeared and it became transparent like blood serum. It was always alkaline, and contained fibrin, albumen, and fat. The varying degree of milkiness was due to the varying quantity of fat. Under the microscope myriads of fine fat molecules were seen sometimes mixed with larger oil globules; in addition to these, pale corpuscles, identical in structure with white blood and chyle corpuscles, were always present, but not in large numbers.

The condition of the urine was carefully noted during the progress of the case. It varied in quantity from 13 to 40 ounces per day, was most abundant when there was no discharge from the vesicles. Its specific gravity varied from 1025 to 1032. On several occasions the urine was chylous, and on microscopic and chemical examination, excepting the ordinary constituents of urine, presented all the characters of the milky discharge.

This condition continued for several years, without any very marked effect upon his general health until pulmonary phthisis set in, which speedily terminated in death.

Autopsy, twenty-one hours after death.—Both lungs were studded with gray granulations, intermixed with larger masses of gray and yellow tubercles, some of which were softened. Two small vomices were found in the left apex and one in the right. Tuberculous ulcers were found in the small and large intestines. The bronchial and mesenteric glands were enlarged. The liver weighed sixty-four ounces, and the spleen nine ounces; both organs were healthy. The kidneys and bladder were healthy. The integument of the hypogastrium was much thickened and spongy, contrasting strongly with the emaciated skin over the thorax. The lining membrane of the bladder appeared smooth, glistening, and healthy. Nothing abnormal about the thoracic duct or lymphatic vessels or glands could be detected.

Examination of a portion of the diseased skin. A vertical section exhibited disease of the cutis vera and the subcutaneous tissue. The tendinous, muscular, and peritoneal strata of the abdominal wall were normal. The skin was immensely thickened, and formed with the subcutaneous tissue a pad, varying from a half to an inch in thickness. When fresh, the cut surface had a pale rose and somewhat fleshy or glandular appearance. It was traversed by short ducts or lacunæ, varying from the width of a crow's quill to that of a hair. On microscopic examination the lacunæ could be seen to communicate freely with each other by small orifices. The vesicles constituted the surface boundaries of the superficial lacunæ. The lining membrane of the vesicles and of the lacunæ was smooth, glistening, and lined with spherical nucleated cells.

The group of cases numbered from 49 to 66 (both inclusive) present a variety of morbid conditions and afford opportunity for a careful study of several of the phenomena present in my case (No. 1). The nipple-shaped bodies, which were located upon the anterior and inner aspect of the leg (see Fig. 1), were not unlike in appearance similarly described protuberances found in the cases of Fetzner and Roberts. In the latter cases, however, the bodies were lymph-sacs in direct communication with dilated lymph-vessels. In my case the tumors were mainly composed of connective tissue, in the centre of which was a sinus filled with blood. During the life of the child it was manifest that they contained a fluid, for they were partially depressible and were believed to communicate with each other, though no communication could be discovered with the enlarged vein on the outer aspect of the limb. The minute blu-

ish colored puncta about the apices of these bodies were the terminal ends of venous radicles, and their supply of blood was derived through branches from the enlarged vein, which also sent branches to the nævus enclosing the group of vesicles located on the outer aspect of the limb. The connective tissue hyperplasia was due to venous stasis. During the progress of the case reported by Friedberg (48), a nævus developed upon the dorsum of the left hand and blood-vesicles formed upon the left arm. It may be that these bodies were in the beginning blood-vesicles, and failing to rupture, a new growth of connective tissue was set up, or, perhaps, they were hypertrophied papillæ, similar in structure to the prominences described in the following case:

CASE LXVII.¹—The patient was affected by a chronic swelling with induration and cutaneous hypertrophy of the scrotum, of the inguinal regions, and of the two thighs as far as below the knees. The thickened skin was covered here and there with rounded prominences, firm to the touch, sessile, but little vascular. One variety was manifestly due to the hypertrophy of the papillæ, and the other enclosed ampullar dilatations of the lymphatic vessels. From the latter, when excoriated or pricked, oozed in variable quantities a lemon-colored liquid, slightly viscid, transparent, like a weak solution of gum-water. In the left inguinal fold there were two soft prominences, violet colored, fluctuating, and covered with a crust, on the removal of which there escaped a quantity of fluid similar to that above described. The patient had frequently recurring inflammatory attacks, which always caused an augmentation of the affected parts, which progressive increase always proceeded from above downwards.

M. Verneuil rejected the hypothesis of elephantiasis arabum, and insisted that it was a special variety of hypertrophy which was connected with a dilatation of the superficial lymphatic vessels.

In the discussion which took place Demarquay admitted the dilatation of the lymph-vessels, but insisted that the hypertrophy was elephantiac because of the extent of tissue involved, the small quantity of fluid discharged, and the absence of a jet, which, he erroneously maintained, is the invariable manner of escape of the fluid from a varix of the superficial lymphatic network. In this view M. Trélat coincided, and held, fur-

¹ M. Verneuil, Bull. d. la Société Impériale de Chirurgie de Paris, 2d series, Vol. 8, p. 312, 1868. Meeting, July 17, 1867. Non-congenital.

thermore, that the dilatation of the deep network of lymph-vessels was not established, for in all such cases there was found "a circumscribed tumor of greater or less extent, without alteration of the skin," which might be mistaken for a hernia or a lipoma. The extent of the hypertrophy, induration of the tissues and papillary growths, M. Trélat's assertion to the contrary notwithstanding, do not antagonize the hypothesis of M. Verneuil, for in a number of cases previously cited similar morbid conditions were manifestly associated with dilatation and occlusion of lymph-channels. M. Panas had seen two cases of dilatation of the superficial lymphatic network of the scrotum, but neither had anything analogous to the case of M. Verneuil. In both of his cases the fluid was evacuated by puncture and escaped with a jet. In one case the lymphatic dilatation followed a balanitis. The essential question in dispute related to the priority of the conditions—whether the elephantiasis or the disease of the lymphatics was the primary condition. In cases like this, in which "the affection began without known cause, by violent pains and inflammatory swelling," the usual course of the acquired forms, it is not easy to settle the priority of conditions, for usually, when unaccompanied with a discharge, the affection is not observed until pain and swelling are present. In those cases in which discharge occurs prior to the onset of the symptoms which are so markedly present in elephantiac developments, the question of priority is settled in favor of the primary affection of the lymph-vascular system, and in such cases, especially of the acquired forms, the subsequent progress does not differ materially from those cases where the first observable phenomena are characterized by pain and inflammatory swelling, such as occurs in elephantiasis arabum, which it is claimed produces stenosis and obliteration of lymph-vessels, and consequently dilatation of vessels, stasis of lymph, induration and hypertrophy of the tissues. It cannot, however, be denied that inflammatory processes, either erysipelatous or elephantoid, do constitute the beginning of many of the cases of hypertrophic development, which are characterized by all the phenomena which I have ascribed to occlusion and dilatation of lymph-channels, and consequent stasis of lymph. But this fact does not antagonize my view, for it is admitted that such changes as result from the inflammatory processes necessarily

cause lymphangiectasis, and the argument relates to the effects, not the causes of the stasis of lymph. I have previously referred to the suggestion that the congenital cases of ectasia, stenosis, and obliteration of lymph-channels may have been caused by inflammatory conditions taking place during intra-uterine life, and am willing to accept this hypothesis as a probable explanation, but the numerous cases of congenital defect of formation of portions of the lymphatic system, accompanied with hypertrophic enlargements, will not admit of its universal application. The one essential condition is interruption to the current and detention of the lymph, it matters not whether it be caused by devastated glands, absence of valves, absence of anastomotic connection between the superficial and deep-seated system of vessels, or other congenital or acquired conditions.

Of the previously cited cases only in cases 1, 9, 65, 66, and 67 have the nipple-shaped bodies been observed. In the cases of Fetzner and Roberts and my own (No. 1) the protuberances seem to have been similar in form, but in the latter they differed in structure from those in the former two cases. In case 9 they are described as dense, hard, fibrous tubercles, like those seen in tubercular leprosy, studding here and there the rugose, dense, and hardened skin. In case 67 there were two varieties of prominences—one hypertrophied papillæ, the other ampullar dilatation of lymphatic vessels. Thus it appears that these prominences present themselves in four distinct varieties—as fibroma, as seen in case 9; as hypertrophied papillæ, as in Verneuil's case; as vascular cavernous growths, to which class the bodies in case 1 belong, and as ampullar dilatations of lymphatic vessels, as presented in cases 65, 66, and 67. Any two or more of these varieties may coexist in the same subject. In Smith's case (No. 9) the tubercular fibroma sprung from a densely hardened and thickened skin, occupied with a spongy, erectile, venous, cavernous tissue, and in case 1 the bodies consisted of connective tissue and blood-vessels resting upon a spongy vascular tissue. In both cases (1 and 9) the bodies were found in immediate connection with phlebectasis and stasis of venous blood, and consisted in case 9 wholly, and in case 1 mainly, of newly formed connective tissue—a verification of the relation of stasis of venous blood to connective tissue

hyperplasia. In case 65 there were a number of these wart like tumors, varying in size from that of a male to that of a female nipple, which could be pressed into the abdominal wall, but rose again upon the removal of the pressure. Fetzner removed one of these bodies and passed a probe through the opening to the depth of one inch. From this opening a large quantity of milky fluid escaped in a stream. The communication between these ampullar dilatations and the lymph-cavernous structure beneath was thus demonstrated to be an open and direct channel, but in Roberts's case they were not intercommunicating, but depressible, and seemed to communicate with a deeply situated reservoir of anastomosing channels. The thickened skin and subcutaneous tissue were traversed by short channels or lacunæ, varying from the size of a hair to that of a crow's quill, which seemed to communicate freely with each other by small, smooth orifices. The nipple-shaped bodies and the vesicles evidently "constituted the surface boundaries of the more superficial lacunæ." Analogous elevations will be considered hereafter.

Vesicular formations or cutaneous vesicles, variously described by different writers as ampullæ, bladder-like sacs, or cystic degenerations of the terminal ends of lymph-channels, are phenomena very constantly associated with hypertrophies, in which the lymphatic system is mainly involved. These dilatations of the lymph-plexuses of origin, as they are denominated by Binet and Phillipe Aime-David, are more or less prominent, hemispherical, usually transparent, not always depressible, vary in size, in the beginning not often exceeding the size of a pin's head or a lentil, and enlarging at a more advanced period, but not often projecting more than a line and a half above the cutaneous surface. The larger the vesicles, the more markedly ampullar, forming sacs with constricted necks. They often rupture spontaneously, and are always easily perforated with a pointed instrument, discharging a slightly alkaline, viscid fluid, usually having a milky color, and varying in quantity, sometimes escaping in a continuous stream, at other times drop by drop, or in a jet. The quantity discharged may be increased by the erect posture, by movements of the neighboring muscles, or by pressure along the course of the connecting lymphatic vessels. When the body is placed in a horizontal position they

usually diminish in size or fulness, and, if ruptured, cease discharging. The fluid evacuated stiffens on cooling, coagulates on exposure to the air, and is, chemically and microscopically, analagous to lymph. Cruveilhier¹ encountered pus several times in ampullar lymphatic varices, and others have occasionally found a fluid more or less mixed with blood and other extraneous matters. When depressible they retake their form upon removal of the pressure. These ampullar dilatations of the terminal extremities of the lymphatic capillaries, or more properly of the lymph-spaces, are usually found in groups of closely aggregated vesicles, though not observing, as maintained by several observers, any definite order of arrangement, and have a predilection for localities rich in the superficial plexuses and where the trunkal vessels are more developed and so disposed as to suffer distention from accumulation of lymph, such as the upper anterior and posterior surfaces of the thigh, malleolar regions, anterior abdominal walls, scrotum, and prepuce. When at their most advanced development (Binet), they allow the lymph to flow from one to another, and are always associated with dilatation of connecting subcutaneous vessels, which may be cylindrical in form, feeling like hard, knotted, flexible, mobile cord, or moniliform—seeming to be constituted of a series of little bladders placed one following the other, or they may communicate with a lymph-cavernous structure lying beneath. When the vesicular formations are covered with the cutis they may develop to the size of a male or female nipple, or even larger. When beneath the skin, involving the subcutaneous vessels only, they are usually much larger and feel like rounded tumors, more or less voluminous, but are not adherent to the skin. The movable cyst-like subcutaneous body which was located upon the inner surface of the knee-joint in case 1, and which disappeared spontaneously during the first month of the child's life, was, perhaps, an illustration of this latter variety of ampullar dilatation. In Paterson's case (No. 57), a cyst-like protuberance formed during the lifetime of the infant, which proved on examination to be a "conglobate" formation of varicose lymphatic channels. In the cases of Amussat, Drinkard, and Fetzer (60, 61, and 63), the tumors, mistaken for herniæ, consisted of a congeries of

¹ *Traité d'Anat. Patholog. Gen.* Paris, 1852, T. II., p. 823.

dilated and distended lymph-vessels, so interwoven as to convey the sensation of sacs.

Demarquay's case (No. 50) was characterized by a series of little depressible vesicles grouped around each other, which developed slowly and spontaneously, were enlarged when walking and diminished with rest. Attention was first awakened by the discharge of lymph, and, subsequently, the flow was increased by pressure above and below the rupture. The fluid collected by Lebert separated on cooling into a clear fluid and a yellowish clot. Lymph-cells and red blood-corpuscles were held in suspension. Quevenne's analysis showed marked similarity to blood. The serum resembled milk, and contained sugar. The nature of the discharged fluid and the direct continuity of the vesicles being thus established, the succession of the morbid phenomena become exceedingly interesting and instructive. The lymphorrhagia commenced during active, and perhaps violent exercise, when the accumulation of lymph became excessive, consequent upon active muscular movements and stasis occasioned by occluded vessels or impermeable glands. Valvular insufficiency existed, either as a congenital defect of formation, or resulted from excessive vascular distention, and a reflux current ensued. The walls of the vessels were gradually thinned, the ampullar dilatations developed slowly and gradually, and rupture followed consequent upon the persistent passive accumulation. Subsequent to these phenomena tumefaction, hypertrophic enlargement of the neighboring soft parts, took place. Thus the histogenic relation of lymph-stasis becomes an observed phenomenon.

No less remarkable, and even more instructive, is the case of Thilesen (No. 52). A boy, aged 19, had from infancy a perfectly smooth painless tumor of the skin, sharply defined above by Ponpart's ligament and extending downwards towards the knee. After a time the skin, especially upon the anterior and inner aspect of the thigh, towards the scrotum—a region rich in lymphatic networks and anastomoses—thinned in places, presenting small, shining, slightly elevated spots, similar, probably, to the cicatricial spots observed in my own case. These spots, when ruptured, either spontaneously or by violent effort, discharged a yellowish-white, opalescent, coagulable fluid, which sometimes escaped in jets. Subsequently, the enlargement

increased, and extended downwards, involving the leg and foot, and many of the former thinned skinned shining spots developed into transparent vesicles, distended with fluid, which on microscopic examination exhibited the usual characteristics of lymph. Similar thinned skinned spots formed upon the foot, especially upon the plantar surface and between the toes, and numerous vesicular projections formed upon other parts of the limb, especially upon the inner surface of the thigh, varying in size, the largest not exceeding one and a half lines in height, and looking like shining spots in the hypertrophied integument. They were broader at their apices than at their bases, depressible, and refilling with the recurrent fluid, and could be directly traced into the superficial vessels, some of which were dilated to the size of a crow's quill. Beneath the thickened, firm, compact integument covering the inner surface of the thigh, in the region where the ampullar varices were most abundant, several deep-seated, hard cords could be distinguished. No thinned spots or vesicles appeared upon the leg or dorsum of the foot, though the integument was thickened over the entire surface of the hypertrophied parts. The lymphatic varices, either in the form of shining spots or distinct and elevated vesicles, were only found in regions of the thigh where finely meshed lymphatic networks are distributed through the integument, and on the plantar surface and sides (Thilesen) of the toes, where the richest lymph networks of the lower extremity are found. The hypertrophy of the integument developed *pari passu* with the degree and extent of the lymph-stasis, and was most marked in those localities where the evidences of the accumulation of the fluid were most manifest.

The slow and spontaneous development of the wart-like tumors in M. Fetzner's case (65), the effacement of the prominences by pressure, their locality in a region rich in plexuses, the reflux current from one to another, their grouping near together, their thin integumental covering, the easy introduction of a probe to the right or left, and the chemical and microscopical analogy of the fluid with "milk," establish the nature of the lesion, the connection of the varices of the superficial integumental plexuses with ectasia of the deeper-seated vessels, and points (Binet) to congenital defect of the terminal extremities of lymphatic channels. It may be that the inguinal tumors, mistaken, as in Amussat's

case (60), for herniæ, were ampullar dilatations of lymphatic vessels; or that the pressure of the truss occluded certain vessels, thus developing a congenital defect in the structure of the superficial plexuses. The suggestion of Aime-David, that the lesion resulted from the pressure of the stays upon the abdominal parietes, is hardly tenable, in view of the anatomical connection of the superficial lymphatics of the abdominal walls with the inguinal glands.

Lymphangiectasiæ assume a variety of forms. Lebert¹ divides varices of the lymphatics into three forms: 1st, groups of closely aggregated vesicles, varying in size from a pin's head to a lentil; 2d, more voluminous ampullæ connecting directly with neighboring vessels undergoing cylindrical dilatation; and 3d, varices of regions of vessels forming a mass of varices. Cruveilhier² divides them into two varieties—the ampullar and cylindrical, or non-circumscribed varices. This division, suggests Binet, is only applicable to the varices of the vessels of the lower extremities, and are analogous to the forms of venous varicosities, though less frequent—their infrequency being due to the absence of any propelling organ, the greater resistance of the vascular walls to the lateral pressure of the fluid, to the resistance offered by the valves to a reflux current, and to the static force of the superimposed column of fluid. Aime-David makes two divisions—the traumatic and spontaneous. The latter being exclusively confined to regions rich in the distribution of vessels and plexuses.

Among the congenital cases there are illustrations of several varieties. The moniliform, in which the integrity of the valves is preserved, giving to the vessel a knotted, rosary-like form, as if constituted of a series of bladders placed one by the side of the other. When exaggerated the vessel becomes cylindrical, which involves valvular insufficiency. This form may be limited to a part, or to a single vessel, or may involve a number of neighboring vessels, presenting the character of sac-like tumors, or may extend to the vessels of an entire limb, and, as in Amussat's case and the case of the new-born calf (59), an extensive region of internal vessels may be implicated.

¹ *Traité d'Anatomie Pathologique Générale et Spéciale*, Paris, 1857, T. I., p. 548.

² *Traité d'Anatomie Pathologique*, T. II., p. 823, 1853.

The cavernous dilatation is but an exaggeration of the cystoid form, but may find its origin in an expansion of lymph-capillaries; in either case the size of the caverns depends upon the coalescence of smaller cysts or expanded capillaries, through atrophy of the intervening septa. The superficial ampullæ, and small cysts found in the parenchyma of the diseased part are, I think, formed in congenital cases in like manner, and are usually the dilatation of the lymph-canaliculi of Recklinghausen, assuming the cystoid form when situated in the parenchyma, and the ampullar when bulging from the surface. The cavernous tumor may result from the continuous coalescence of caverns and cysts by continual atrophy of intervening walls, and the entire parenchyma of a part may be transformed into a cavernous trabecular tissue by extension of the lymph-stasis, involving the entire system of lymph-canaliculi. When the accumulation is confined or extends to the canaliculi of the integument, gradual thinning of the epidermis takes place in consequence of the continuous presence and constant oscillation of the accumulated fluid, eventuating in the formation of vesicles, projecting above the surface. The lymph-canalicular system is without valves, and free intercommunication is preserved through the (proto-plasmic) processes (of the branched cells of Klein). Ectasia might thus ensue, either from stasis resulting from occlusion of neighboring trunks, or from impermeable glands, or from the constant oscillation of the fluid due to the congenital defect, or absence of valves in the capillaries. Weber says, the cystoid dilatations have been observed upon the thoracic duct, and Lebert refers to ampullar dilatations of trunkal vessels. Such is not improbable, thus presenting an aneurisinal form, but no such instance exists among the congenital cases.

The ampullar or vesicular dilatations may find their cause in ectasia of the terminal ends of the central lymph capillary of the papillæ of the skin. This mode of origin occurs quite frequently among the acquired cases, and is undoubtedly the mode of formation of the vesicles usually present in elephantiasis arabum, but as it involves an inflammatory process which is absent in the congenital cases, with, perhaps, the exception of Demarquay's case (50), it is not probable that the vesicles in

any of these cases are the dilated lymph-capillaries of the cutaneous papillæ.

The lymphatics of the skin¹ consist of "definite canals" with walls, and spaces "which are the interstices in the tissue of the skin." The lymph-vessels of the subcutaneous cellular tissue anastomose very freely, and running towards the corium form two networks, one situated below the outer, and the other beneath the lower capillary blood vascular plexus. These lymphatic networks anastomose less freely than the subcutaneous system of vessels. The interstices of the corium are filled with a serous fluid, and in œdematous conditions "are for the most part the seat of the effusion." The communication of these serous interstices or lymph-spaces with the lymphatic vessels proper has not been demonstrated. Neumann maintains that the lymph capillary systems of the skin are closed canals without stomata, unconnected with the mesh-spaces and that the inner plexus is abundantly distributed to the hair and sebaceous follicles, to the fat tissue, sweat-glands, and throughout the connective tissue. The lymph and blood capillaries are independent of each other, yet their anatomical, and perhaps histological, relation is worthy of notice, especially as, in œdematous conditions of the skin, this relation appears more immediate and direct. The lymphatics are accompanied by one or two blood-capillaries, which lie close to their walls, often encroaching upon the cavities of the lymph-capillaries. In man the blood-capillaries, like the larger vessels, "are surrounded by parallel connective-tissue fibres, between which and the walls lie the perivascular lymph-spaces. Klein² claims to have demonstrated the open continuity of the peribronchial lymph-spaces with the lumen of the bronchial tubes, and it is not improbable that further research will establish a similar anatomical relation of the perivascular lymphatics with the lumen of the blood-vessels. Küss locates the base of the lymphatic cone at the epithelia.

Biesiadecki denies that the papillæ of the skin in a normal condition are supplied with lymph-vessels. Teichmann, however, holds the opposite view, but admits that the central vessels of the papillæ never reach entirely to the apex,

¹ Biesiadecki, Stricker's Manual, Amer. Trans., p. 542.

² Anatomy of the Lymphatics of the Lungs.

sometimes forming only a slight projection into their bases, and at other places extending half way the height of the papillæ, but that every papillæ is not provided with a central lymph-vessel. When found they are derived from the outer network. In the skin of an elephantiac leg he found, with few exceptions, the papillæ supplied with lymph-vessels, extending generally from two-thirds to three-fourths their length, greatly enlarged, and usually dividing near the bases of the papillæ into two vessels which emptied into the superficial network. The accompanying figure (37) from Teichmann¹ illustrates these conditions.

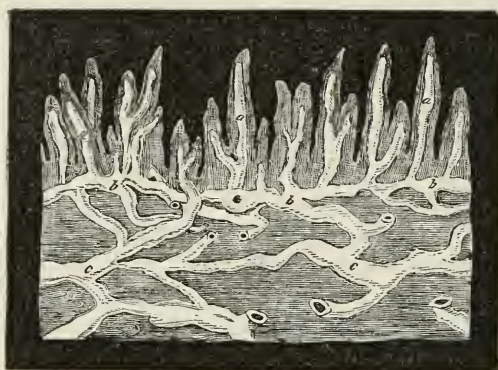


FIG. 37.

“Perpendicular section through the integument of the sole of a foot affected by elephantiasis; *aa*, the cul-de-sac-like starting-point of the lymph-vessels in the enlarged papillæ; *b*, vessels of external layer; *c*, vessels of internal layer. The vessels of the internal layer are collapsed, their dimensions are not therefore corresponding to their width.”

Odenius² in a case of lymphorrhagic pachydermia, in which the vesicular formations were confined to the inner aspect of the left thigh, about six inches above the knee, found distinctly marked open ducts leading through the bases of the papillæ into the superficial lymph network, and beneath the surface of the cutis he found “wide, canal-like caverns or cavities,” from which branches extended upward towards the papillæ and

¹ Das Saugadersystem, p. 62, Leipzig, 1841.

² Deutsche Klinik, 1874, p. 385.

downwards into the deeper tissues of the skin. The arrangement of the lymph tracks differed from that described by Teichmann, in that a majority of the canals which ran deep into the tissues, as well as a portion of those which ran horizontally, presented equal contours and a rounded form, while others possessed an irregular, angular, sinuous boundary, and a lumen irregularly enlarged. The exuded fluid presented all the characteristics of lymph, containing an unusually large proportion of fat. These observations of Teichmann and Odenius, so contradictory of the opinion of Biesiadecki and others, suggest the inquiry whether the central lymph-vessel of a papilla, when found, is a newly formed or a preformed vessel. Odenius found the papillæ, for the most part, which did not participate in the vesicle formation, "small and without any sign of a cavity," even in their bases, but in certain isolated cases he recognized tracks or sinuses extending from the superficial network more or less into the papillæ, which he claims represent the first stage of vesiculation, and he corroborates the supposition that the central lymph-vessel of a papilla, when found, is a newly formed vessel. He insists that the "horizontal canals which pass upward towards the papillæ are mere excavations in the tissues and not dilated preformed vessels." The lymph-spaces acquire a free communication with the lymph-vessels proper and afford efflux to the advancing fluid, which, as the dilatation of the cavity progresses through the papilla, forces its way to the epidermis and collects in a vesicle. In this manner Odenius explains the varying development of a central lymph-vessel, sometimes entirely through the centre and terminating in a vesicle, at other places simply presenting a pouch-like projection into the base of a papilla, the varying gradations of development depending upon the duration of the morbid process.

It cannot be doubted that the vesicle formations in the case of Odenius, and probably also in the case of Teichmann, were directly connected, through open canals, with the lymph-vessels, for the vesicles characterized themselves as true lymphangiectasiæ, but it cannot be maintained that all lymphatic vesicle formations are the terminal ampullar dilatations of newly-formed lymph-vessels, which have, by gradual and continuous development, penetrated the cutaneous papillæ, or that they

bear any anatomical relation whatever to the papillæ. In many cases, perhaps in most, they are true ectasiæ of the serous spaces or the lymphatic radicles of the integument. The cases of Odenius and Teichmann were associated with inflammatory processes, and the vesicles, as in many diseases involving the structure of the skin, were immediately connected with the changes effected by the inflammation.

M. Michel, of Strasburg (Binet), has twice observed papillated and whitened patches, several centimetres in extent, on the internal surface of the thigh, which he considered an exaggeration of the normal condition, but Binet regards such appearances as a "pathological alteration of the lymphatic capillaries." He insists that almost the entire surface of the body is covered by capillaries of extreme tenuity, but that certain localities are richer in plexuses than others, and only in the parts where these plexuses are so abundantly developed are "varices of the plexus" or vesicles to be found.

C. Handfield Jones¹ has reported three cases of "dilatation of the lymphatic radicles," which presented a plexiform arrangement of freely intercommunicating "vasoid spaces" lying immediately beneath the epidermis, seeming to groove the corium, and disappearing at the localities where the superficial vessels passed into the tissues to unite with the deeper lymphatic vessels. The intercommunication of these sub-epidermal vasoid spaces and the direction of the current of the lymph was demonstrated by the rapidity and continuousness of the discharge from a needle puncture. Jones does not describe any vesicle formations, such as have been usually observed, but suggests that the excessive transudation of lymph found efflux through the dilated serous spaces, communicating one with another along a continuous course, and finally emptying into the deeper system of vessels. This form of varix had not been previously described, and may, perhaps, have been an exaggeration of the condition of "wide, canal-like caverns, or cavities," observed by Odenius, but without vesicles. Venous obstruction was present in all of these cases, to which circumstance Jones attributes the peculiarity of the form of the varices, for only through the lymph-channels could the œdematous fluid find egress from the tissues.

¹London Lancet, July 31, 1875.

The cases of "lymph scrotum," more properly cases of pachydermia lymphangiectatica (Rindfleisch), reported by Carter, Manson, Wiedel, and others, present vesicle formations "in the form of cavities which have their seat in the uppermost layer of the cutis itself," and project above the surface in vesicles of varying size. All these cases belong to the acquired forms, but to illustrate this variety of lymph-varices I have selected the case of the adult Hindoo, reported by Carter,¹ which presents a number of interesting phenomena.

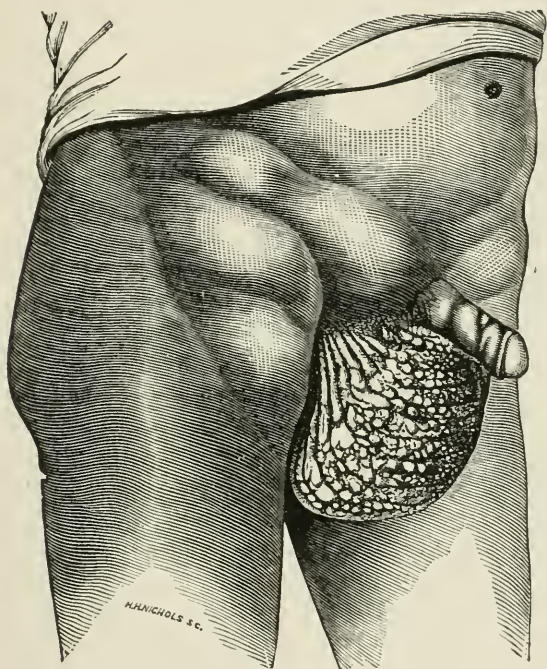


FIG. 38.

CASE LXVIII.—The skin of the scrotum was corrugated, thickened, and studded with numerous tubercles, varying in size from a pin's head to a pea, soft to the touch, and when punctured discharged a chylous fluid, sometimes equalling a pound daily. Sometimes it issued spontaneously from one or more of the tubercles. When it ceased, and occasionally during its continuance, the urine became chylous and frequently coagulated. The inguinal glands on both

¹ *Medico-Chirurgical Trans.*, vol. 45, p. 189, 1862.

sides were much enlarged (see Fig. 38), soft, doughy, and diminished under pressure. The tumefaction of these glands seemed to alternate with the appearance of chyle in the urine, and increased two or three hours after a full meal and then subsided. The appearance of chyle in the urine was irregular, when chylous it was either white, reddish-white, or pinkish, with a subsequent deposit of blood-corpuscles. It usually coagulated more or less completely, the clot assuming a rose color. The quantity was greatly increased; decomposed rapidly. Sp. grav., 1.017.

The fluid discharged from the scrotum while flowing assumed a red color, coagulated very rapidly, the clot being red and the serum milky. It consisted of a molecular base, granules, red blood-corpuscles, some well-formed, some granular and starred; corpuscles rather larger than these, with color less decided and margins slightly irregular; others having a mulberry aspect, varying in size and sometimes flattened; lastly, granular corpuscles, $\frac{1}{2700}$ of an inch in diameter, and resembling lymph-corpuscles. The blood serum was quite clear.

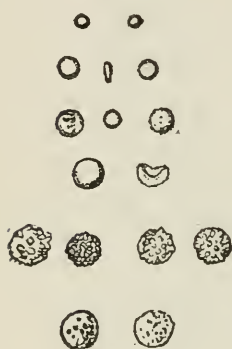


FIG. 39.

Lymph (chyle?) from the scrotum.

a. Red blood-corpuscles $\frac{1}{4000}$ to $\frac{1}{6000}$ inch in diameter, some granular and starred.

b. Corpuscles rather larger ($\frac{1}{3300}$ to $\frac{1}{2600}$ in.), but like them; color less decided, and margins less irregular; numerous.

c. Numerous nuclei, varying in size ($\frac{1}{3800}$ to $\frac{1}{2300}$ in.); some mulberry-shape, some flattened.

d. White blood-corpuscles, very few; $\frac{1}{2700}$ in.; fibrinous striæ.

As a rule, the chyluria appeared with the cessation of the discharge from the scrotal vesicles and alternated with the tumefaction of the inguinal glands. These facts, though insufficient to establish the hypothesis of Carter (see *N. O. Med. and Surg. Jour.*, July, 1877), that the fluid was chyle, which by a retrograde movement found its way to the scrotum, inguinal glands, and bladder, do establish the identity of the fluid which collected in the inguinal glands, and which was alternately emitted from the scrotal vesicles and bladder. The three conditions were directly connected, and manifestly due to stasis of lymph. In Carter's case, impediment to the lymph-stream was above the superficial inguinal ganglia. He ascribed the enlargement of the glands to increased function, in connection with dilated vessels extending inwards, even as high as the thoracic duct.

The cases of Roberts and Carter (66 and 68) are pathologically identical, and the absolute identity of the discharges with lymph, or chyle, establish the similarity of the structures and of the morbid processes producing them. The objective phenomena in both cases consisted of obstructed and dilated lymph-channels and stasis of lymph, and in each case the lymphorrhagia alternated with the chyluria. It may, then (Roberts), be assumed that the condition producing the chylous urine was essentially of the same pathological nature as the disease of the abdominal walls in Roberts's case, and of the scrotum in Carter's case. Roberts suspected from the discovery of the *Bilharzia hæmatobia* in endemic hæmaturia that chyluria might owe its origin to the presence of parasites in the lymphatic vessels, which supposition has been verified by the more recent discovery, by Lewis, of the filaria in cases of chylous urine, and, by Winckel (Case 45, *N. O. Med. and Surg. Jour.*), in a case of chylous ascites. Lewis supposed these parasites penetrated the walls of the lymph-channels, thus establishing apertures through which the fluid escaped. "Chylous urine," says Roberts, "prevails mostly in youth and middle-age, but no case has been traced to congenital origin." The youngest example Roberts refers to Prout, which occurred in a male infant eighteen months old, in which case a fatty substance mixed with triple phosphate was discovered "in the urine of a delicate child fed on milk."

The vesicles in cases of pachydermia lymphangiectatica are "partial (Rindfleisch) ampullar dilatations of the superficial subpapillary lymphatic net." The inner surface of these vesicles is always lined with lymphatic endothelium, and the covering is "formed by the epidermis and the papillary layer." Rindfleisch¹ insists that regions most usually invaded with this affection are the richest in organic muscle, which in the tunica dartos forms "a proper membranous organ." This structural element in this class of cases undergoes "a special hyperplasia and neoplasia," and by contraction compresses "the lymphatic trunks which penetrate the cutis in a straight direction, and connect the superficial with the deep lymphatic net," thus preventing efflux of the lymph and consequent ampullar dilatation of the terminal radicles. A similar effect might also follow

¹ Text-Book of Pathological Histology, Amer. Translation, p. 313, 1872.

simple elasticity of the muscular parenchyma. These pathohistological conditions might stand in an etiological relation to the cutaneous vesicles, but certainly they are insufficient to explain the glandular engorgement and chyluria, and it may be that the hypertrophy of the dartos is an effect rather than the cause of the stasis of lymph. In another of Carter's cases, and in one of Manson's cases of "lymph scrotum," a similar coexistence of phenomena was present; and in a number of the cases of "lymph scrotum," as in Wiedel's¹ case of pachydermia lymphangiectatica, the vesicles which studded the skin of the scrotum were directly associated with engorged inguinal glands. These circumstances would lead to the conclusion that the "ampullar dilatations of the superficial subpapillary lymphatic net," which Rindfleisch ascribes to hypertrophy of the organic muscle of the skin, were the remote effects of obstruction to the lymph-stream situated anatomically above the inguinal ganglia. In cases 54, 55, 56, 57, and 58 the vesicle formations were associated with cylindrical or monilliform varicosities of the connected vessels.

Among the acquired forms of lymphatic varices there are a number of cases (see the cases of Petters, Stewart, Bryk, Oppolzer, and Rokitansky, *N. O. Med. and Surg. Jour.*, September, 1877) in which lymph-varices were occasioned by obstructive heart circulation, and a number of other cases in which dilatation and rupture of lymph-channels occurred in consequence of impediment to the lymph-stream, located at or near the entrance of the thoracic duct into the left subclavian vein; but among the congenital cases, the case of Virchow (59), probably the case of Friedberg (48), and the following case reported by Cholmeley, are the only instances in which the heart circulation bore any causal relation to the lymph-varices:

CASE LXIX.²—Louisa R., the fourteenth of seventeen children; was, like her brothers and sisters, born at full term, but was deeply cyanosed; her lips and fingers were dark blue, her face livid, and the general surface of the body dark. Respiration was very labored and sighing, and for many weeks it was not supposed that she could live. Suffered for the first four or five years from frequent attacks of dyspnoea, and "inflammation on the chest," but "was always well nourished and fat," and is now (1869) "short, stout, and generally

¹ Inaugural, Abhandlung, Würzburg, 1837.

² Cholmeley, *Trans. Clin. Soc.*, London, vol. ii., p. 116, 1869.

healthy looking, with a good, bright red color in the cheeks and lips, but is easily affected by colds, and then complains of "want of breath," and a feeling of tightness in the chest; and at such times the complexion assumes a markedly livid tint, respiration becomes somewhat labored and noisy, the extremities cold, and the nails dark blue. No morbid sounds are heard in the lungs. The pulse is normal in frequency, rhythm, volume, and force; "but all over the heart is heard a soft, blowing, systolic murmur, which is loudest at the junction of the second left costal cartilage with the sternum."

During her sixth year a swelling appeared on her right leg and ankle, which gradually extended upwards, though not above the knee, until two years had elapsed; but in the third year, when the patient was between seven and eight, "the swelling extended slowly and steadily upwards till the whole limb was implicated," but has not gone above the "inguinal line." The increase in the size of the swelling was always greater towards the evening, and did not affect the foot when a boot was worn or when the child first got up, but was very great in the foot if the boot was not put on. When treated in 1867, by rest in bed with elevation of the foot, graduating bandages from the toes to the groin, and pressure on the femoral artery, "the swelling diminished considerably, but returned rapidly as soon as she was allowed to be about again."

At the date of the report the entire limb was uniformly enlarged, felt "soft, firm, and elastic"—the lower part being firmer and more tense than the upper—in color and temperature the limb did not differ. The skin was smooth and soft as far downwards as the middle third of the leg, below it was "harsh, rough, dry," and scaly. On the outer aspect of the ankle were a number of "soft, smooth, red flattened papules," not larger than a split pea. On the hypertrophied skin of the great, second, and third toes were "rough, hard elevations, looking much like a half-aborted and dried herpetic eruption," from which occasionally a discharge took place; and over the tendo-Achilles was a "humid patch, from which a milky-looking alkaline fluid dripped," similar in character to the fluid which issued through punctures made into the lower part of the limb, which exhibited under the microscope "broken-up cells, granular matter, some oil-globules, blood-corpuscles," and coagulated on boiling.

The comparative measurements of the lower extremities were as follows:

	<i>Left.</i>		<i>Right.</i>	
At the ankle.....	8	inches.	9 $\frac{5}{8}$	inches.
Mid. leg.....	9	"	14	"
Below knee.....	9 $\frac{5}{8}$	"	14 $\frac{1}{4}$	"
Above the knee.....	10 $\frac{1}{4}$	"	16 $\frac{1}{4}$	"
Upper part of the thigh....	15	"	17 $\frac{1}{4}$	"

There was no fulness or swelling of any kind detected in the groin or pelvis; nothing abnormal in the condition of the right nympha or

labium; never any pain in the limb, nor any injury, accident, or known cause to account for the condition."

The deeply cyanosed condition at birth, which never entirely disappeared; the frequent attacks of dyspnoea, which were always accompanied with increased lividity of the face and finger nails, and the "blowing, systolic murmur," which was loudest at the junction of the second left costal cartilage with the sternum, which was probably due to some congenital defect—all point to cardiac anomaly, and cannot, in view of the clinical histories and post-mortem appearances furnished by the cases of Stewart, Rokitsansky, and Petters (see *N. O. Med. and Surg. Jour.*, Sept., 1877), be dissociated from a causal connection with the stasis of lymph, which first manifested itself near the ankle during the sixth year, and which gradually increased until the entire system of superficial lymph-vessels of the limb seem to have become involved. In Virchow's case (59), a thrombus partly lying in the outlet of the external jugular vein so occluded the mouth of the thoracic duct, "that nearly all the internal organs were dilated to the utmost by ectatic lymph-vessels. The intestines were covered everywhere with broad bead-like canals." In Stewart's case (No. 55, *N. O. Med. and Surg. Jour.*), "the heart was hypertrophied and fatty, the aortic valves much diseased and covered with vegetations; the auriculo-ventricular orifices were dilated and the valves diseased," and the intestinal villi and mesenteric lacteals were engorged with chyle and lymph. In Petters' case, in which there was stenosis of both auriculo-ventricular orifices, and dilatation of the right side of the heart, the lymph-glands of the right inguinal region were transformed into cysts, and the mucous surface of the small intestines was covered with lenticular eminences filled with a transparent fluid. In Rokitsansky's case (No. 37, *N. O. Med. and Surg. Jour.*), a dilated and hypertrophied heart, with mitral insufficiency, was found in connection with dilatation of an extensive area of lymph-vessels, stasis of lymph and effusion of lymph and chyle into the pleural and peritoneal cavities. The venous teleangiectasis upon the thorax of Friedberg's patient (48), the nodes upon the left arm, and the venous network upon the anterior thoracic wall were observed at birth. These, together with the dilatation of the cutaneous veins upon the inner side of the left arm, and the eruption

which resembled hemorrhagic spots, which remained, point to a disturbance of the circulation. The grouping of these evidences about the left arm and left clavicular region suggested to Friedberg the hypothesis that the flow of blood in the "vena cava sinistra" had met with an obstruction which extended its influence over the adjacent portions of the lymphatic and venous systems. Fetzner believed the condition into which his patient sank, and the reddish color of the coagulum of the lymph which exuded from the ruptured vesicles during the existence of this condition, were attributable to the regurgitation of blood into the left innominate vein and its entrance into the thoracic duct, with which he supposed the diseased lymphatic vessels communicated. In Ormerod's case of chylous ascites (No. 40, *N. O. Med. and Surg. Jour.*, March, 1877), the left subclavian vein and its afferent vessels were clogged with a light-colored clot, which prevented the flow of the contents of the thoracic duct into the vein, leading to the effusion of chyle into the peritoneal cavity; and in Cayley's case (No. 39, *N. O. Med. and Surg. Jour.*, March, 1877) of rupture of the receptaculum chyli, the thoracic duct was obstructed at its entrance into the left subclavian vein by fibrinous vegetations. These observations establish the influence of the heart circulation on the movement of the chyle and lymph, and illustrate the agency of obstructive cardiac diseases in the production of lymph-varices. Independently of the other cases cited, the case of the new-born calf observed by Virchow, in which extensive and remote areas of lymph-varices were discovered, adequately illustrates the causal influence of an impediment to the free exit of the contents of the thoracic duct, produced by a thrombus pendent from the opening of the external jugular vein. With this brief résumé of this important question, which the reader will find more elaborately discussed in the *N. O. Med. and Surg. Jour.* (see Nos. for Sept. and Oct., 1877), I will proceed with the presentation of other forms of lymph-varices.

CASE LXX.¹—A child, two years old, had from birth a thick tongue, which had greatly increased during the preceding two weeks. The tongue protruded from the mouth in a broad, thick, hard mass, and was closely encircled by the stretched lips. From two punctures

¹ Virchow, *Archiv für Pathol. Anat. und Physiolog. und klinische Med.*, vol. vii., p. 126. 1854.

made in the under surface a small quantity of blood was evacuated, but a tumor, situated below the right inferior maxilla, furnished several tablespoonfuls of a lymph-like fluid. Subsequently a portion was removed, measuring one and one-half inches in length, one and three-quarter inches in width, and three-quarters of an inch in thickness. Across the dorsum of this part extended a thick epithelial covering, removable in flakes. A few of the papillæ retained their filiform appearance; the most of them appeared thicker and coarser. Towards the point of the tongue they were as usual, but flattened upon the edges. Upon the posterior under surface lay, in partly bead-like rows, bluish, transparent vesicles, varying from very fine, just visible bodies, to the size of large flax seeds.

Upon section a pale, peculiarly cavernous tissue appeared, which differed from the appearance of ordinary cavernous tumors by the contents of the inter-trabecular caverns, in which was found a clear, yellowish fluid, here and there somewhat turbid, in other places coagulated into clear, transparent masses. The evacuated fluid coagulated upon exposure to the air, and contained albumen.

Upon longitudinal section through one lateral half of the ablated portion the cavernous tissue was found principally in the middle part corresponding to the region of the transverse muscle, as shown in Fig. 40.

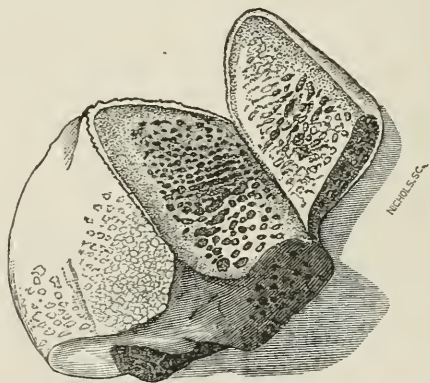


FIG. 40.

Upon the top could be distinguished the whitish, tough layer of the mucous membrane and the papillæ; below it a longitudinally striated, very tough, and whitish layer; next, the cavernous mass, and below again a more longitudinally striated layer, which continued beyond the apex. The same result was found upon transverse section, and the cavernous structure appeared in the centre in very coarse

meshes, whilst towards the lateral portions it became fine, and towards the periphery the mesh-cavities became smaller and smaller in such a manner that bead-like vesicles could be traced up to the papillæ. The cavities were elongated perpendicularly, and varied in size from the smallest, barely visible points, to over one line in their greatest diameter. The width of the trabeculæ varied. Many of the cavities communicated by narrow openings; many, however, appeared closed, and the adjacent vesicles could be seen shining through at the bottom; the trabeculæ and partition walls which bound them were sharply defined, more or less smooth, and pale. See Fig. 41.

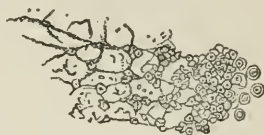


FIG. 41.

The smooth, regular walls, the bead-like course, the albuminous and fibrinogenous contents, the simultaneous disease of the gland below the inferior maxilla, from which the lymphatic fluid was discharged several times, the relatively rapid development of the large tumor, the complete freedom from pain, and the absence of any considerable hyperæmia, induced Virchow to ascribe the cavernous structure to the passive development of pre-existing lymph-vessels, in which an accumulation of fluid had taken place.

“Wherever the mesh-cavities contained coagulum it consisted of fibrinous threads united in a net-like manner, in which was enclosed numerous round cells of the size, form, and character of lymph-corpuscles. They were slightly nucleated, and contained single or multiple nuclei, which became more distinct by acetic acid.” Virchow failed to demonstrate the wall-elements of lymph-vessels, but occasionally found traces of epithelium. The connective-tissue stroma contained numerous granular formations and cell-forms, which were especially abundant in the basic stroma of the papillæ. In the interior of the cavernous layer—as in the peripheral layers—he found the connective-tissue corpuscles in close proximity to other stellate cells, containing two or more nuclei, and as the interstitial tissue decreased the stellate bodies grew broader and larger, becoming arranged in rows and finally collecting in dark groups, as shown in Fig. 42. These observations led him to the conclusion that the cystoid cavities resulted from the progressive development of the connective-tissue corpuscles, and that in the above case the lymph-vessels and connective-tissue

corpuscles were simultaneously involved. These conclusions he subsequently verified by examining the part of the tongue removed by Casper von Seibold, in 1791, and which had been perfectly preserved in alcohol. "The tongue belonged to a girl aged 12, had been unusually thick at birth, and grown slowly to such a size that it finally protruded beyond the edge of the teeth four and a half inches, was six inches wide, and two-thirds of an inch thick." The removed portion was covered with enlarged papillæ and interspersed throughout its structure with numerous rounded and oblong cavities.



FIG. 42.

Billroth¹ concludes from his examinations of several specimens from the excised portions of congenital macrochilia,² that the affection is analogous to macroglossia, and insists that the respective tumor formations occur in two forms essentially different externally; that is, they are either "connective tissue new formations between the muscular fasciculi, or cavernous cystoid degenerations, where the caverns contain a lymphoid fluid—a tumor formation, which, in contradistinction to cavernous blood-tumors, can be distinguished as cavernous lymph-tumors. Both forms can combine with one another, which may be the more easily comprehended, as both owe their existence to a proliferation of connective-tissue cells, whose eventual further development into fibrous connective-tissue, or transformation of their corpuscular elements into a homogeneous fluid, determines the external difference of both forms of tumors."

He maintains that the condition of the tongue in the cases reported by Wagner, O. Weber and Volkmann, was due to the enormous new formation of connective tissue between the muscles. In Langenbeck's cases of macrochilia, the excised portions showed hypertrophic development of connective tissue and considerable enlargement of the glands of the lip, but the congenitally thickened lip had no independent growth. The following case of congenital macrochilia was observed by Billroth in Langenbeck's clinic.

¹ Beiträge zur Pathologische Histologie, p. 215.

² Cases of Wagner and Langenbeck.

CASE LXXI.—C. R., aged fifteen, was born with a thick upper lip. He often suffered with swelling of the glands of the neck during childhood, without suppuration ever taking place, and several times the upper lip had been inflamed and much swollen, which had subsided, leaving only an increased enlargement of the lip. At the time of the observation (1859), the boy appeared well nourished; the upper lip protruded beyond the lower, and was far beyond its normal size. The buccal mucous membrane turned outward, was corroded, bled easily; color dark-red. The tumor felt tensely elastic, not fluctuating, was not painful, and could not be diminished by pressure.

The excised portion collapsed very much, and showed to the naked eye a distinct cavernous trabecular tissue, and a lymphoid serous fluid could be pressed from the deeper caverns, while coagula were found in the smaller caverns. The trabeculae were formed in part of connective tissue only, in part also by fibres of the orbicularis oris; the largest cavities were of the size of small peas, the smallest microscopic. Microscopic examination showed that the trabeculae consisted mostly of inelastic connective-tissue fibres, mixed with many elastic fibres; in some of them lay also many striped muscular fibres in larger or smaller microscopic bundles, especially in the periphery; blood-vessels were recognized in many trabeculae, especially small arteries. A single layer of small spindle-shaped cells surrounded most of the finer trabeculae in the manner of vascular epithelium. The serous fluid found in the meshes presented only small cells in a fluid containing albumen and mucin, which were so like lymph-corpuscles, that they could not be distinguished from them; similar cells were also found in the white coagula of the smallest meshes.

CASE LXXII.¹—E. S., aged seven months, suffered from congenital macroglossia, which about every four weeks was attacked with some inflammation, attended with difficult deglutition, dyspnoea and considerable enlargement of the neighboring lymphatic glands. The volume of the tongue was increased after each attack, finally attaining the size of an ordinary apple, felt very tense to the touch; was dark-red; its surface was covered with a thick, white coating. The strongly developed papillae gave to the surface a thickly villous, furry appearance.

The protruding portion was amputated, and on examination its parenchyma was found to have degenerated into a cavernous mesh-work, whose trabeculae were partly formed of white, firm connective-tissue cords, partly by muscle bundles. The fluid within the meshes of the cavernous tissue coagulated into very white coagula, which looked like fibrin coagula and consisted of lymph-corpuscles.

The examination of these specimens led Billroth to the conclusion that the caverns were in connection with the lymphatic system, which was corroborated by the clinical histories of the

¹ Billroth, loc. cit.

cases. He failed to demonstrate any direct communications between the caverns and lymph vascular system, and examined the transition portions from the healthy to the diseased tissue, with special reference to this point, with the following result:

"The source of development was in the connective-tissue cells, whose nuclei divided and gave rise to the cell-agglomerations found in the connective tissue as well as between the muscle-bundles. The cells which could be isolated formed the starting-point of the disease; the rapidly increasing cells produced either a firm connective-tissue substance, resulting in the fibroid form of tongue or lip hypertrophy, or the intercellular substance produced by the cells was fluid, and the cavernous form was the result—both may be combined, as was the case in the tongue, where a partly fibrous¹ and partly cystoid tissue was developed."

Billroth coincides with Virchow, that in such conditions as were found in cases 71 and 72, a cavernous ectasia of lymph-vessels was the primary and predominant condition, but he differs from Virchow in the opinion that all cases of congenital macroglossia and macrochilia find their cause in ectasia of lymph-vessels and spaces, and holds that in some cases the hypertrophy was solely a fibroid development. From these views Weber² dissents, and maintains that it is an hypertrophy of the muscular tissue, having its beginning in an exudation of plastic material as the result of some obscure inflammatory process.

CASE LXXIII.³—A young girl, 10 years of age. For a year and a half the parents noticed that the nose increased in size towards the root and lateral parts; the tumefaction extended by degrees to the two inferior eyelids and towards the inter-superciliary space; it increased gradually while remaining circumscribed in these regions. The tumor was punctured, but in two days was reproduced to the

¹ Billroth asserts that cavernous lymph-tumors, like cavernous blood-tumors, may sometimes combine with fibroid and lipoma formations, and cites the case of a tumor extirpated by Langenbeck, in which the mesh-cavities contained a fluid, which under the microscope looked like lymph, and in which the fibroid and lipomatous formations were found. He also observed in a tumor of the lobe of the ear of bean size, that a third of it consisted of cavernous tissue with lymphoid fluid, whilst the other two-thirds presented the structure of fibroma.

² Archiv f. Patholog. Anat. und Physiolog., vol. vii., 1854.

³ M. N. Dalbanne, élève du service de M. Prof. Broca. Le Courrier Medical, No. 50, Dec. 12, 1874, p. 394.

same size as before. Subsequently she was committed to the care of M. Broca. At this time both lower eyelids were much enlarged, soft, giving a false sensation of fluctuation as in lipoma, and simulated two voluminous pads which encroached upon the eyeballs, partially covering them and elevating the upper lids. The base of the nose and the lower part of the forehead participated in the tumefaction, which effaced above the level of the frontal protuberances, and which descended on either side to the convex borders of the cartilage of the nares. The facial mask presented a peculiar aspect; on the two sides, the swelling had produced a sort of levelling; the deep depression which separates the bridge of the nose from the prominence of the malar bones was partially filled up; the inferior angles of the eye were raised. The skin of the eyelids was slightly bluish; that of the forehead and nose was pale and shining. The thinned skin could be raised. The tumor could be but slightly diminished by pressure, but the contents flowed from one part to another. Broca punctured the tumor on the left eyelid and the entire tumor disappeared, proving a communication between the pouches. The fluid discharged was pale yellow, and exhibited, on microscopic examination, red globules, some normal, others crenated and deformed; no globulins nor fat granules. It coagulated on exposure to the air, the coagulum was slightly red and contained red and white corpuscles. The serum was alkaline. Broca concluded that the case was one of lymphatic angioma.

Broca regarded the lesions in this case as closely comparable, if not identical, with those presented in the case of macroglossia reported by Virchow. In the latter case the lacunæ varied from points scarcely perceptible to cavities measuring more than a line; many of the cavities communicated by minute openings in their intervening septa. According to Virchow the cavernous structure depended on the simultaneous dilatation of the lymphatic vessels and of the plasmatic channels in communication with them. Sappey rejects any hypothesis involving distention of the serous canaliculi of the connective tissue, but admits the ectasy of the vessels. Broca suggests that the cavernous condition may be produced by the dilatation of lymphatic vessels, which "elongate themselves, become tortuous, return upon themselves in the form of clusters comparable to little bladders united to each other," and by the thinning and rupture of their walls become transformed into lacunæ. Some of these lymphatic varices undergo a polycystic transformation, which some have attributed to obliteration of the vessel, but Sappey denies this and insists that the ectasy is due to a primary lesion of the walls of the vessels, which dimin-

ishes resistance and elasticity, and which "depends on a general influence as unknown as that which presides over the formation of venous tumors."

Virchow insists that the "bead-like, bluish, transparent vesicles, which varied in size from just visible bodies to the size of hempseed," found on the under surface of the ablated portion of the tongue, were dilated terminal lymph-spaces, and communicated by very fine apertures with deeper-seated vessels, or with the cavities of the cavernous tissue of the parenchyma. For, notwithstanding this connection could not be demonstrated, it could be shown that the cystoid spaces, probably dilated lymph canaliculi, became smaller and smaller towards the surface, and, finally, bead-like vesicles could be traced up to the papillæ. The characteristics of the cavities with which the hypertrophied portion were interspersed, can only be explained upon the supposition of the primary ectasia of lymph-channels. Their smooth, regular walls, bead-like course, the albuminous contents, and the simultaneous enlargement of a neighboring gland, from which lymph was discharged, point to a passive dilatation of lymph-channels. In one of Billroth's cases, cavernous trabecular tissue was distinctly visible to the naked eye, from which a lymphoid fluid could be pressed, and, in the other case, he found a cavernous transformation of the parenchyma containing a lymphoid fluid. Neither Billroth nor Virchow succeeded in establishing a direct continuity between the caverns and lymph-capillaries, but the microscopic character of the fluid was sufficient. In one of Billroth's cases it was not possible to distinguish the fluid from lymph, and in the other it consisted of lymph-corpuscles and fibrin. Virchow maintains that the cystoid formations found in the nodes of congenital hypertrophies are formed by the dilatation of the lymph-spaces, though their communication with lymph-vessels may not be recognized. Billroth, though holding that congenital macroglossia and macrochilia may be either solid or cystic, concedes that the cysts owe their origin to occlusion and dilatation of lymph-channels; and O. Weber¹ asserts that congenital lymphangiectasias of the tongue and lip find their cause in dilatation of the final terminations, or, more correctly, of the origin of the lymph-vessels.

¹ Billroth and Pitha, *Surgery*, vol. vii., 2d div., 1st part, p. 72.

"In a clinical aspect," says Billroth, "the connection of cavernous degeneration of the tongue and lip with disease of the lymphatic system is highly probable, especially in connection with a scrofulous diathesis." In both cases detailed by him, "rather considerable tumefaction of the submaxillary glands existed simultaneously with the affection of the tongue and lip, especially in the acute attacks, which, he suggests, may be traced to lymph thrombosis taking place in the cavernous spaces." In this connection I append the case of "elephantiasis dependent on the scrofulous habit," reported by Hufeland.¹

CASE LXXIV.²—A boy, aged fifteen, had a congenital tumor of the upper lip, which protruded beyond the lower lip in the form of a hemisphere; was painless, could not be compressed, not fluctuating, and tensely elastic. It was frequently attacked by acute inflammation, and bled easily. After its excision, it presented, even to the naked eye, a cavernous trabecular tissue, whose mesh-cavities contained partly coagulum, partly serous fluid. The trabeculae consisted of connective tissue which contained many elastic fibres and blood-vessels; they were invested by epithelium. The fluid contained small cells like lymph-corpuscles.

(To be concluded in the next number.)

¹ A girl with a scrofulous constitution having had in infancy discharges from the ears, ulcerated eyelids, and all the symptoms of a scrofulous diathesis, was seized with small-pox in her eleventh year. She continued in good health for two years; but in the course of her thirteenth year a swelling commenced on her left foot, which extended to the calf. This disappeared, but subsequently returned and extended throughout the entire limb, the left foot growing to twice the size of the right, was cool, pale, and so hard that the fingers could make no impression on it. Subsequently, a vesicle appeared on the inside of the left knee, from which a yellowish serous fluid was discharged. The vesicle healed, but reappeared, and the matter discharged this time resembled coagulated milk, and was so acrid as to inflame all the neighboring parts. The foot continued to swell and grow harder, until it felt in some places like leather. She had at varying intervals violent attacks of delirium, oppression, and congestion of the brain, beginning with the approach of the catamenia. The leg continued to grow, became overspread with a red color mixed with a bluish tint. A small, shining, very tense spot appeared on the calf. This and the vesicle ulcerated and discharged fetid pus. Nevertheless, the limb continued to grow, became monstrous in size, and scirrhus throughout; glandular swellings appeared in various parts, which inflamed and suppurated. Hectic set in, and death ensued.—A Treatise on Scrofulous Disease, Translated by C. D. Meigs, M.D., Philadelphia, 1829, p. 212.

² Lücke. Billroth and Pitha, Surgery, vol. ii., div. 1, part 2d, p. 268.

REPORT OF A SUCCESSFUL CASE OF CESAREAN SECTION
AFTER SEVEN DAYS' LABOR, WITH SOME COMMENTS
UPON THE OPERATION.

BY

EDWARD W. JENKS, M.D.,

Professor of Medical and Surgical Diseases of Women and Obstetrics, Detroit Medical College;
Fellow of the American Gynecological Society, etc., etc.

THE Cesarean section is an operation so rarely performed, and under any circumstance is considered so formidable a one, as well as uncertain in good results, that the reports of cases should not, in the opinion of the writer, be withheld from the profession. It is believed that the following case possesses a special interest on account of the time which elapsed from the beginning of labor until abdominal section was made, and from the fact that the patient fully recovered under what seemed to be the most adverse circumstances.

On the evening of the 16th of June last, my friend, Dr. Flinterman, of this city, came for me in great haste, with the announcement that he wished me to perform Cesarean section upon a woman at full term, a primipara, who had been already seven days in labor in charge of women; that he had been summoned within the past hour, and found the patient quite exhausted. He further said that upon examination the left shoulder was found presenting at the brim of a rachitic pelvis, so deformed that the conjugate diameter of the superior strait did not exceed two inches. Hoping that my friend might be deceived as to the deformity of the pelvis, and that I might be able in some manner to deliver the poor woman *per vias naturales*, I suggested the taking of a full supply of embryotomy instruments. The doctor replied that he would carry all I possessed, but he was satisfied that she could be delivered in no way but by Cesarean section. Upon reaching the house I learned that seven days before the liquor amnii had been discharged; the labor-pains soon followed, and were quite severe; that they had continued with but short intervals up to the present time; that the woman's mother and several other women all concurred in the opinion that labor would terminate happily after a while; but a midwife was called in during the present day, who, discovering an arm presentation, at once sent for Dr. Flinterman. The patient, æt. twenty-four, a healthy German woman, was much enfeebled by the many days of severe pain, so that it became necessary to administer stimulants before making an examination.

Upon passing my hand into the vagina there gushed forth a quantity of putrid fluid of the most offensive character, clearly indicating that

decomposition of something had taken place, but by drawing down the presenting arm there were no indications of its being the fœtus.

The woman was then etherized for the purpose of facilitating examination and making any operation we might decide upon. Examination corroborated the opinion of Dr. Flinterman as to the deformity of the pelvis. I could barely insert three fingers above the brim, but could not possibly crowd my hand beyond it, even when the woman was held upon her knees and chest; version was thus shown to be an impossibility. Fully convinced that in impacted cross-births, amputation of limbs, evisceration, or extraction of the child by piecemeal, are the most dangerous of all obstetric operations, I should not, even where instruments can be easily manipulated within the parturient canal, long hesitate between such procedure and the Cesarean section, or gastro-elytrotomy, if there was a fair chance of saving fetal life. There are matters, however, which must be determined in each individual case, and where a general rule cannot be implicitly followed, I shall discuss this point briefly farther on in this paper.

But in this instance, putting to one side all such considerations, the angularities of the parturient canal caused by the pelvic distortion prevented any kind of instrumental delivery per vaginam, for there was no opportunity of carrying any instrument above the superior strait, and at the same time allowing a hand in the vagina as a guide. If the presentation had been a cephalic one, then perforation and cephalotripsy might have been performed.

The fetal heart-sounds could not be heard, and although the evidence was not positive of the child's death, it was markedly presumptive. The condition of the child, whether dead or alive, not being considered, it was very apparent that it must be removed by abdominal section, or else the woman be left to die undelivered.

The apartment which the patient occupied was heated to about 80° F., when with the efficient aid of Drs. Flinterman and Torrey, I proceeded after the usual method of performing gastrotomy, first securing firm and equable pressure by the hands of my assistants upon the uterus through the abdominal walls, for the triple purpose of holding it in position, to prevent blood from the wound escaping into the peritoneal cavity, and to protect the viscera from unnecessary exposure to the air. It is needless to enter into a full description of the minute details of every step of the operation, and I only allude to the means taken to facilitate the section, and to prevent secondary troubles, as I consider them important considerations bearing upon gastrotomy for any purpose.

The incision was made from about an inch and a half above the pubes to the umbilicus, a distance of at least seven inches, a corresponding cut was made into the uterus. The fœtus was seized by the feet and readily extracted. Pulsation in the umbilical cord had ceased, and although the child was dead, it did not present the appearance of having been so long. If the operation had been performed a few hours earlier, the child, without doubt, could have been saved, as it was fully developed and well nourished.

The placenta was adherent to the fundus of the uterus, but was readily extruded through the incision by the uterine contractions and with it came out also a quantity of the putrid fluid which had produced the horrible stench before alluded to. This offensive fluid was evidently due to clots of blood within the uterus, as there were no signs of decomposition about either the placenta or the fetus. There were from four to six ounces of this dirty fluid, and in spite of all our precautions a small quantity escaped into the peritoneal cavity. The uterus was carefully sponged out, that no source of further decomposition might remain therein. The uterus contracted, but not sufficiently to prevent blood from escaping throughout the entire length of the incision, while particularly from the severed sinuses did it flow in a large stream.

I accordingly closed the uterine rent by four silver wire sutures, carrying them deeply into the uterine substance from lining to covering of the viscus, in hopes that during the process of involution it might be possible for them to be discharged by the uterine canal in a similar manner as is claimed are sutures put into incised or wounded intestines. The sutures were all twisted and the ends turned downward into the line of the incision. The abdominal cavity was carefully, but rapidly, sponged out, the external wound was closed by deep silver wire sutures and superficial ones of silk, and a flannel roller bandage put around the abdomen, the whole operation being completed within twenty-five minutes. The woman rallied well, and the next morning was quite comfortable. About sixteen hours after the operation her pulse was 120 and her temperature 103°, the most rapid pulse and the highest temperature attained at any time. After this, pulse and temperature subsided.

Twenty-four hours later the patient was as comfortable and apparently in no more perilous a condition than women usually are at this period of the puerperal state following the easiest of labors. Convalescence proceeded without interruption, and the woman at this time is engaged in her usual occupation of housewife, as strong and well as ever before in her life.

This closes the record of the case, and while this brief paper is in no sense intended as an essay upon gastro-hysterotomy, I cannot forbear making the foregoing narrative the text for some further remarks bearing upon it and the Cesarean operation in general.

Gastro-elytrotomy, an operation theoretically much more simple and less dangerous than the Cesarean section, might have been performed, but I am inclined to the opinion that the thorough sponging of the interior of the uterus, thus ridding it of the products of decomposition rather than allowing them to discharge *per vias naturales*, rendered the patient less liable to putrid infection, and more than counterbalanced the possible lesser risk of gastro-elytrotomy.

The length of time this woman had been in labor would of itself, judging by the history of other cases, be sufficient to prevent her recovery from the dangerous operation she was subjected to. But upon this point we must bear in mind that the majority of women who have been operated upon after this method had previously been subjected to long-continued intra-uterine manipulations, and fruitless attempts at delivery before abdominal section was attempted, and hence the great mortality of Cesarean operation. In this case, from the fact that there were no intra-uterine manipulations (for the reason that they could not be made beyond the cervix), I think we find a satisfactory explanation of one of the most important factors of her recovery. The question might properly be discussed here—under what circumstances is the Cesarean section justifiable, when the fetus can be delivered by other means? I fully agree with one of the reviewers of Playfair's *Obstetrics*,¹ who writes as follows: "As long as craniotomy is practicable, it should be performed in preference to the Cesarean section. . . . This question of craniotomy or Cesarean section in extreme cases of pelvic deformity is still *sub judice*; we doubt whether the latter operation, performed on a healthy woman and at an early stage of labor,² would not give a better percentage of recoveries than craniotomy, done, as is usually the case, on a patient more or less prostrated by a protracted confinement and various attempts at instrumental delivery." In transverse fetal presentations, the long and often fruitless attempts to perform version, when mutilation of the child becomes necessary before it is delivered, are as dangerous to the life of the mother as the Cesarean section. In fact, it would seem as if the latter was far preferable, as it is no more hazardous for the mother and affords the only opportunity of saving the child. In England, where the Cesarean operation is held in less esteem than on the Continent, the percentage of recoveries of mothers and children saved has been much larger,

¹ Dr. Mundé in *American Jour. of Obstetrics*, Jan., 1877.

² This opinion seems fully corroborated in the fact that women have been operated upon two, three, and even four times. When operated upon once, no time was lost in subsequent pregnancies in attempts to deliver *per vias naturales*. Dr. Gibson, of Philadelphia, performed Cesarean section successfully twice on the same woman.

when made on account of malignant disease of the womb, than when made by reason of the more common causes of deformed pelves and malpresentations. The value of timely surgical interference before the patient is exhausted is thus illustrated. In the valuable essay of Dr. Harris,¹ statistics are given clearly demonstrating this same point. He gives a table of seventeen cases, operated upon during, or at the close of the first day of labor. In all of the cases but one the child was removed alive. Of these cases $73\frac{1}{3}$ per cent. of women and $86\frac{2}{3}$ per cent. of children were saved by operating early. Can statistics of embryotomy make an equally good exhibit?

It is not long since ovariectomy has been recognized as justifiable under any circumstances, but to-day the hundreds living who but for its performance would have died, have made it a legitimate operation and placed it in its true light before the profession. If the same skill and care are applied to the Cesarean operation that have been to this, "it will then present its true measure of danger as a surgical operation, instead of the exaggerated character which it has been made to exhibit." It is possible that gastro-elytrotomy, an operation as yet in extreme infancy, may prove practically, what it is upon more theoretical grounds, a much better and safer operation than gastro-hysterotomy.

The Cesarean section has been made, so far as can be ascertained, less than one hundred times in the United States. At the time Dr. Harris's paper was published he could learn of but sixty operations, with twenty-eight deaths of mothers, while twenty-seven children were delivered alive. In Great Britain and Ireland the mortality has been greater. Are there not some means other than those already alluded to, of lessening still more the death-rate of this operation? In looking over the reports of cases we will find quite often an account of one where the uterus did not contract well after the fetus was extracted, where bleeding continued and as a consequence the abdomen was left open a long time, until it was thought safe to close it. Two cases, at least, are on record where the uterus was removed on account of uncontrollable hemorrhage. One is by Dr. H. R. Storer,² whose patient died

¹ The Cesarean Operation in the United States. By Robert Harris, M.D. American Jour. of Obstetrics, Nov., 1871, and Feb., 1872.

² Jour. Gynæc. Soc., Boston, Oct. No., 1869.

in sixty-eight hours. Another was recently reported by Prof. Spaeth¹ of Vienna, who operated under spray; the bleeding not stopping, he ligated the uterus just above its vaginal insertion, then amputated with an *écraseur* and brought the pedicle out of the wound. Strange to say, the patient recovered. These *may* have been exceptional cases, but it would seem as if in the majority of instances the loss of blood, long delay occasioning shock, and exposure of the peritoneal cavity to the air, are among the risks that are preventable by immediate closure of the uterine rent with sutures, either of catgut, silver, or silk. In case the hemorrhage proceeds not from the cut surfaces but from the interior of the uterus, on account of uterine inertia (which gives rise to post-partum hemorrhage in ordinary labors), then ergot should be administered hypodermically, as an additional precaution.

The advice in many obstetrical works, about being in no haste to close up the wound, but to wait until the uterus contracts, is not good surgical advice. Sutures closing up the uterine wound insure contraction, and at the same time prevent what otherwise might be a long delay, lessening the danger from shock; further, the uterine sutures prevent the escape by any straining effort of blood or lochia into the peritoneal cavity, through the uterine incisions—thus diminishing the danger of peritonitis or septicemia. I would prefer catgut or silver as the material for uterine sutures, but in the absence of either would rather use silk or linen than to make use of none. There is not that dread of leaving sutures in the peritoneal cavity which formerly existed, as every ovariologist can testify.

I have myself left, in one case of ovariectomy, eight silk ligatures, and in another eighteen within the peritoneal cavity, without ill consequences; they have been left in large numbers by Dr. Peaslee and others, without evil results. All operators of course prefer cases of ovariectomy where there is no need of ligatures being thus left, but still it is a fact that they are tolerated by the peritoneum. The question of uterine toleration of such innocuous substances as catgut or silver wire, is no longer an undecided one, if we may judge of their great service by the history of the limited number of cases where they have been allowed to remain. Dr. Harris says²:

¹ The Clinic, Cincinnati, July 28, 1877.

² Op. cit.

"I am disposed to believe that they do not materially add to the gravity of the operation." If the wound in the uterus contracts, after the fetus and placenta are removed, its length will not be more than two inches, but even then there is danger of secondary gaping with all its evils consequences, and hence the necessity of their use.

In my own case, the cut in the uterus was fully five inches in length when the sutures were inserted; there were no indications of immediate contraction to a safe length, and the blood poured forth in a dangerous manner; but the sutures at once arrested the hemorrhage. It would seem worse than folly to wait an indefinite length of time under such circumstances for the uterus to contract, in obedience to an old obstetrical rule, when modern experience teaches us that its breach is more to be honored than its observance. I believe the following to be a safer rule. "The application of uterine sutures after every Cesarean section will probably diminish the rate of mortality attending that operation."¹

84 LAFAYETTE AVE., DETROIT.

THE NARCOTIC EFFECT OF MORPHIA ON THE NEW-BORN CHILD, WHEN ADMINISTERED TO THE MOTHER IN LABOR.

BY

WALTER R. GILLETTE, M.D.,

Visiting Physician to Charity Hospital Lying-in Department; Visiting Physician New York Lying-in Asylum; Visiting Physician St. Francis Hospital; Late Adj. Prof. of Obstetrics, Medical Department, University City of New York.

DURING the recent discussion before the New York Obstetrical Society, concerning "The Influence on the Fetus of Medicines, particularly Narcotics, administered to the Mother during Pregnancy," it was my opportunity to present the histories of six cases where, under my observation, morphine had been administered during the second stage of labor, for the direct purpose of determining, so far as such a limited number of observations could, whether it was *possible* to narcotize the fetus

¹ Rodenstein, Amer. Jour. of Obstet., Vol. III., page 582.

in utero, in a way to be recognized after its birth. These experiments were made with a distinct bias in my mind that such an effect could be produced, and this bias arose from observations which had been thrust upon me in the varied accidents and incidents of obstetric practice. The experiments which I reported in these six cases were selected in that the subjects of them were healthy women, who, in the history of former labors, or in their condition indicated as near as might be that they were safe and comfortable child-bearers, and presented at the time of observation labors normal in every respect. I thought this attempt at elimination of all possible causes of asphyxia in the new-born necessary to a clear result. In every case the child was born in a state of *narcotism*—that is, there was a complete absence of or delay in the respiration, and the infants were only sustained and resuscitated by continuing every possible method of artificial respiration. The circulation was irregular, the surface was cyanosed, the pupils contracted, the body limp and flaccid, the jaws dropped, the eye-lids half closed, and the child presented every physical appearance so common to the typical case of opium-poisoning in the adult. The condition in no case resembled any one of the forms of suspended animation in the new-born that I had ever encountered or read of, and it was then deliberately impressed upon me still more strongly than it ever had been accidentally that morphia was a dangerous remedy to use during labor, and when administered to the degree of producing its physiological phenomena in the mother, will invariably produce a *relative* condition of narcotism in the new-born infant. This statement was opposed by Drs. Barker and Peaslee, who considered morphia in labor as innocuous to the child as ether or chloroform. If I may judge by the sentiments expressed by other members of the Society, I think the general opinion was that it was a dangerous drug to administer to its full physiological effect under such circumstances. Drs. Thomas, Skene, Green and others, took a very positive stand in the matter, and unhesitatingly expressed their fear of it.

We have now to hear the other side of the question, and Dr. Lusk, in the April No. of this *Journal*, relates a series of eleven cases, in which morphia was given by Dr. Beckwith, of the Nursery and Child's Hospital, to women in labor, with

an effect upon the new-born so totally opposite to that witnessed in my cases as to call for a re-examination of the subject, and renewed experimentation. First, to explain the fact that Dr. Beckwith utterly failed to repeat the results which were so marked in my cases. The Doctor administered morphia to eleven women in labor and discovered no narcotic effect in a single instance among the new-born. Therefore, Dr. Lusk's inference was apparently proper, that, "so far as deductions can be drawn from a limited number of observations, there is no reason to apprehend any direct effect to the child from morphia administered to the mother during labor." But let us examine Dr. Lusk's observations a little more closely, and see if we do not discover why Dr. Beckwith's experiments failed to repeat the results I reported. I think Dr. Lusk explains the reason of failure clearly. He says: "It cannot be objected that the quantities of morphia given by Dr. Beckwith were insufficient, for in seven cases twelve minims of Magendie's solution were used hypodermically, in one case twenty-four minims, in another twenty-five minims, and in one three-fourths of a grain of morphia was given by the mouth and twenty-four minims of Magendie's solution were injected under the skin. In this last case, while the mother's pupils were manifestly contracted, those of the infant were unaffected. In these comparatively large doses, *it is interesting to note that though eight of the eleven women slept, and for the most part soundly, from the morphia given, none of them showed signs of labored breathing or cyanosis. The respiration, the pulse, and the size of the pupils appeared to be only moderately affected.*" This, it seems to me, is a distinct avowal that the quantities of morphia given by Dr. Beckwith *were* manifestly insufficient, inasmuch as *they failed to produce the phenomena of opium narcosis in the mothers.* The simple phenomenon of "sleep," which Dr. Lusk regarded as "the degree of narcotism of the mother," is not of itself a sufficient evidence of narcotism; it is rather the character of the sleep which renders the individual partially anesthetic to pain, and the accompanying slowing and irregularity of the respiration, with the congested, dull facies, the contracted pupil, the itching of the nose or other regions, all these and other appearances so clinically familiar make up the picture of the phenomena of opium narcosis. Dr.

Beckwith's experiments, although carried out with great care and exactitude, stopped short of producing that effect with the drug which was related in my cases. Sleep is not an unusual manifestation between pains in ordinary labor when it has been severe or protracted, and taken alone is not evidence of narcosis. Why the Doctor failed to produce a sufficient effect with the *quantities* of morphia used, is not a matter of conjecture wholly either, for in Cases 1, 2, 3, 5, and 7, the drug was not administered soon enough to ensure any effect in patients who might have been more tolerant of it from the pains they were suffering. Thus, in Case 1 it was only administered forty-five minutes before labor; Case 2, twenty-five minutes; Cases 3 and 4, eighteen minutes; Case 5, eighteen minutes; Case 7, thirty minutes. In all these cases it will be observed also, that the pupils were not contracted below the normal, as compared with the table of measurements of the pupil in the table of normal labors, and "in none of them (the eleven cases) were there signs of labored breathing or cyanosis," while "the respirations, the pulse, and the size of the pupils appeared to be only moderately affected." Surely, then, there was no decided degree of opium narcosis produced in the mothers. I have records of several cases where precisely the same results as shown, that is, where morphine had been administered to what seemed to be a *safe amount*, without producing any decided symptoms of narcosis in the mother or the child, but where the drug was given to the effect of producing a marked *degree of narcosis* in the mother, it invariably produced a relative degree of narcosis in the new-born. This will appear upon referring to the cases in the Transactions of the N. Y. Obstetrical Society, April, 1877. Since that time other observations have been made by Dr. F. Townsend, Dr. F. Parsons, of the House Staff of Charity Hospital, under my supervision and direction in the wards of the Lying-in-Department of Charity Hospital, and myself with the results related below, and these it will be seen correspond with the former observations made by Dr. Estabrook, of the House Staff, and myself. I now present fifteen additional cases where morphia was administered to the mother during the first and second stages of labor, at times sufficiently early to subject the fetus to its influence, and in labors complicated in no way, sensibly material to the

danger of the child during its birth. In carrying out these observations, no attention was paid to the *quantity* of the drug given, the only desideratum being that a decided degree of narcosis should occur in some of its forms—short of utterly prostrating the woman. In conducting these observations, Dr. Townsend and Dr. Parsons maintained the greatest care and exactitude. I witnessed several of these cases in their different stages of narcosis, and we were particularly careful to push the drug to the extent reported in the former cases.

CASE I.—Second pregnancy, L. O. A. First stage ten hours' duration; second stage, ten hours and thirty-five minutes. At 11.50 A.M., 12 minims of Magendie's solution were administered hypodermically, and again 12 minims at 5 P.M., with the effect of slowing pulse from 108 to 87, and respirations from 24 to 22; though they rose again. The face was markedly flushed and dull, the pupils contracted, and the patient drowsy.

The child was born in a condition of *suspended animation*. Pupils contracted. Surface cyanosed; made a gasping effort at respiration, which could be restored by vigorous shaking and artificial respiration, but which immediately ceased when efforts were stopped. It was *twenty* minutes before respirations were regularly established, and it had to be watched two hours, as the breathing would occasionally die away. It did not cry until at least twenty minutes, and then it was more a moan than a cry, and the face indicated profound stupor, the jaw being dropped, the eye-lids half closed. This was remarked by myself and others, as almost a clinical picture of the countenance in opium narcosis in the adult. The pulse was 60, and varied between that and 120 for an hour.

CASE II.—First pregnancy, L. O. A. First stage, nine hours; second stage, two hours and three-quarters.

Gave 12 minims of Magendie at 7.50 P.M., with effect upon the mother similar to Case I., except she did not feel sleepy.

The child was born at 10.15 P.M.; weight $6\frac{1}{2}$ lbs., in a condition of suspended animation. It was fifteen minutes before it could be made to breathe independently of artificial aid, and presented almost exactly the phenomena exhibited in Case I.

CASE III.—Third pregnancy, L. O. A. First stage, one hour; second stage, six hours. Gave 12 minims of Magendie at 4.50 A.M., with effect of reducing pulse from 80 to 60, and the respirations from 36 to 20, in an hour. At 10.30 gave 10 minims more. Mother was sleepy, with contracted pupil, and dusky facies.

Child born at 11.13 A.M.; weight, $9\frac{1}{4}$ lbs., in a condition of suspended animation. Ten minutes after birth the respirations were only eight per minute, irregular and gasping. The pulse was 90. The pupils were contracted, and the appearances were similar to those noted in the former cases.

CASE IV.—Fifth pregnancy, L. O. A. First stage, twenty hours; second stage, twenty minutes.

Gave 12 minims of Magendie, 5.50 P.M., reducing respirations from 42 to 36. The patient was sleepy, with countenance flushed, and pupils contracted.

Child born at 8.50 P.M.; weight $6\frac{1}{4}$ lbs. It was drowsy, breathing forty-two times per minute, five minutes after birth, and remained drowsy and lethargic for some time. The pupils were not contracted.

CASE V.—First pregnancy, L. O. A. First stage, thirty hours; second stage, twenty minutes.

Gave 10 minims of Magendie, hypodermically, at 10 A.M., July 13, slowing the respiration from 20 to 16 in an hour, producing drowsiness, itching of nose. Three hours later, patient sleeping; respirations remained at 16. At 10.15 P.M. gave 10 minims more hypodermically. Respiration 20; face dusky, and pupils contracted.

Child was born at 10.45; weight $10\frac{1}{8}$ lbs. Easily expelled; very cyanotic; slightly asphyxiated, and did not breathe deeply until several minutes.

CASE VI.—Second pregnancy, L. O. A. First stage, ten hours; second stage, one hour fifteen minutes.

Gave hypodermically 12 minims of Magendie's solution at 4.30 P.M., with effect of producing continuous itching of nose; drowsiness; contracted pupils, and congested facies. At 6 P.M. gave 12 minims more, with effect of continuing former symptoms. Respirations twenty.

Child was born at 7.50 P.M. Asphyxiated ten minutes before breathing was established, notwithstanding every effort to resuscitate. Surface was very blue, except white points in the trunk, which had undergone pressure during quick expulsive pains, and which slowly became of color of rest of the surface. After breathing was established, child would only cry out when slapped severely upon the nates. The pupils were contracted.

CASE VII.—First pregnancy, L. O. A. First stage, twelve hours; second stage, five hours.

Gave 12 minims of Magendie hypodermically, at 2.30 A.M., reducing the respirations in three hours from 28 to 18. At 6.30 gave ten minims more, reducing respirations from 22 to 18. At 8 A.M., gave ten minims more. Patient was now sleepy, complaining of itching of her nose. Pupils were normal as regards size, but inactive; facies darkened.

Child was born at 10 A.M. in a state of *suspended animation*. Some minutes before it began to breathe.

CASE VIII.—First pregnancy, L. O. A. First stage, ten hours; second stage, ten hours fifteen minutes.

Gave 12 minims Magendie hypodermically at 9 A.M.; also 12 minims more at 12 A.M., and again 12 minims at 2 P.M. These doses did not seem to affect the pulse or respiration. The facies darkened and pupils contracted; but, nevertheless, the child was born at 5.15 in a condition of *suspended animation*, similar to the others, and was soon brought to.

CASE IX.—First pregnancy, R. O. A. First stage, six hours; second stage, four hours.

Gave hypodermically 15 minims Magendie at 8 A.M., with the effect of drying her throat, and producing marked cutaneous irritation. Pulse and respiration not materially affected; but at 12 A.M. appeared semi-narcotized. At 12.30 gave her 10 minims more. From this time on she was dozing and drowsy, with the usual facial appearance of congestion.

The child was born at 5.50, weighing $8\frac{1}{2}$ lbs. Its surface was very blue, its pupils were distinctly contracted, but it breathed and cried immediately.

CASE X.—Third pregnancy, L. O. A. First stage, four hours and a half; second stage, twenty-five minutes.

Gave 12 minims Magendie hypodermically at 4 A.M.; no apparent effect, except pupils somewhat contracted and feels sleepy.

Child was born at 5.55 A.M. Weight $8\frac{1}{2}$ lbs. Breathed immediately, but was very cyanotic, and pupils contracted.

CASE XI.—First pregnancy, L. O. A. First stage, twenty-four hours; second stage, one hour and three-quarters.

Gave 10 minims hypodermically at 10.30 A.M., with effect of reducing respiration from 28 to 24 during four hours, and making patient drowsy. Respirations went down to 18 and 16 by 5.30 P.M., when they rose at 7.36 P.M. to 26. Ten minims more were injected at 8 P.M., reducing the respiration to 20, producing itching of the nose and usual facial phenomena of narcosis; pupils contracted.

Child was born at 9.45 P.M., weighing 8 lbs. Cord was once around the neck. Asphyxia well marked. Very cyanotic. During first eight minutes after birth, gasped four times. It was twelve minutes before breathing was established voluntarily. During this time, in response to severe slapping upon the nates, it would open its eyes and slowly close them, but gave no other reflex sign of irritation. During the first five minutes after birth four or five seconds would elapse between each beat of the heart. Even when breathing was well established, the infant appeared very drowsy and benumbed, not responding to moderate irritation by pinching or slapping, and if it was severely pinched it would move the part or attempt to draw it away without a moan or a cry.

This certainly was not a case of suspended animation from cerebral congestion or anemia through pressure on the cord. The phenomena were certainly indicative of a more profound impression upon the nerve-centres. The child was bluish, not red and turgid, and respiration only responded to continued efforts.

CASE XII.—First pregnancy, L. O. A. First stage, twenty-two hours; second stage, three and one-half hours.

Gave 12 minims at 10.45 A.M. Contracting the pupils and so anesthetizing the patient that pains are not complained of. Facies dusky.

Child born at 2 P.M., weight 9 lbs. Cord was once about infant's neck, but easily slipped over the shoulder. Child was asphyxiated,

breathed once in a minute and a half. Next minute, under artificial respiration, it breathed sixteen times; the next minute nothing was done, and it breathed *once*. From this time it was induced to breathe freely. Blood dribbled from the cord instead of being projected. It did not cry for five minutes, and only responded to slapping by slowly opening its eyes, closing them again, and wrinkling its face as if in pain. Pupils were small.

CASE XII.—First pregnancy, R. O. A. First stage, six hours; second stage, one and one-half hour.

Gave 16 minims Magendie at 11.30 A.M., reducing respirations from 30 to 26. Pupils contracted; face congested.

Child was born at 1.30 P.M. Asphyxiated, and did not breathe safely for three minutes.

CASE XIV.—First pregnancy, L. O. A.; first stage, 16 hours; second stage, $5\frac{1}{2}$ hours.

Gave 12 minims Magendie at 8 P.M., July 25th, reducing the respirations from 26 to 22; flushing the face, irritating the nose. Respirations down to 20 in two hours, pupils contracted; sleeping between pains. At 5.20 A.M., July 26th, gave 12 minims more, with the effect of sleep between pains, and complaining but little of them. Pupils still contracted. As the head was lingering on the perineum 3 iss. of ergot was administered at intervals of forty-five minutes, but with no effect on uterine contraction.

Child was born naturally one hour and a quarter after the first dose of ergot. Very cyanotic. Respirations catching and slow. Pupils contracted. Insensible except to rough handling.

CASE XV.—First pregnancy; R. O. P. rotated to R. O. A.; first stage 20 hours; second stage 2 hours.

Gave 15 minims of Magendie at 8.15 P.M.; effect, reducing respirations from 28 to 18; pupils contracted; rubbing nose; partial anesthesia; hardly notices labor-pains, with the head on perineum.

Child born at 12.25 A.M. Cord once about the neck; surface very blue; animation suspended. For first five minutes no respirations perceptible; heart could be felt beating very infrequently. At the end of five minutes (by the watch) gasped once; eighth minute breathed 36 times; ninth minute cried out and stopped breathing. At the eighteenth minute it was breathing but 26 times per minute. The pupils were not contracted.

It is possible that the slow delivery of the shoulders, in this case, was an element of cause in its suspended animation; but still the peculiar method of its reviving and dying away, the slowness and irregularity of the respiration, to me gives it an appearance of suffering under some other depressing influence, and presumably narcosis.

I will here summarize the cases in a table, adding some details as to quantity of morphine used, and the pulse, respiration, and temperature of the child; but no inferences can be drawn from them on account of their small number.

TABLE I.

Case.	No. of Pre- pares and Child.	Length of 1st Stage.	Length of 2d Stage.	Time under Influence of Narcotic.	Effects on Mother.	Condition of Child at Birth.	Minimum of Magen- die's Solu- tion ad- ministered	Pulse.	Child's Temp.	Resp.
1	2 L. O. A.	10 hrs.	2½ hrs.	6 hours.	Pulse reduced, 108 to 87; respiration, 24 to 22; pupils contracted; face suffused and dull; patient drowsy.	Suspended animation; pupils contracted; surface cyanosed; twenty minutes required to re-establish respirations; drowsy, with dropped jaw and eyelids half closed; watched two hours.	24	45 m. after birth, 60; 1 h. after, after, 108.	15 m. after, 96½°; in an hour, 91°.	15 m. after birth, 60; 1 h. after, 66.
2	1 L. O. A.	9 hrs.	2¼ hrs.	2 h. 25 min.	Pulse, 80 to 72; respiration, 20; face suffused; pupils contracted.	Suspended animation; pupils contracted; surface cyanosed; facies dull and drowsy; fifteen minutes before respiration safely established.	12	15 m. after birth, 120; 1 h. after, 118.	15 min., 95½°; 1 hr., 96¾°.	15 m. after birth, 45; 1 h. after, 55.
3	3 L. O. A.	1 hr.	6 hrs.	6 h. 23 min.	Pulse reduced from 80 to 60; respirations from 36 to 20; pupils contracted; facies dusky; sleepy.	Suspended animation; pupils contracted; two minutes after birth respirations 8 per minute, irregular and gasping; pulse, 90; facies dull and drowsy.	22	15 m. after birth, 130; ¾ hr., in ¾ hr., after, 114.	15 min., 95½°; ¾ hour, 93½°.	15 m. after birth, 48; 1 h. after, 60.
4	5 L. O. A.	20 hrs.	20 min.	3 hours.	Pulse increased from 96 to 100; respirations decreased from 42 to 36; pupils contracted; facies dull and flushed; sleepy.	Child born drowsy; remaining lethargic for some time; respirations at first, 42; pupils not contracted.	12	15 m. after birth, 122; 1 h. after, 120.	100½°; 99°.	15 m. after birth, 42; 1 h. after, 60.
5	1 L. O. A.	36 hrs.	20 min.	12 h. 15 min.	Pulse increased from 70 to 74; respirations reduced from 20 to 14; pupils contracted; nose itching; face dusky; sleeping.	Slightly asphyxiated, very cyanotic; did not breathe deeply for several minutes.	20	5 m. after birth, 104; 25 m. after, 122.	100½°; 98°.	5 m. after birth, 42; 20 m. after, 40.
6	2 L. O. A.	10 hrs.	1½ hrs.	7 h. 10 min.	Pulse increased from 88 to 100; respirations varied between 16 and 24; no permanent decrease; pupils contracted; countenance flushed; great cutaneous itching; sleepy.	Suspended animation; ten minutes before breathing was established; surface very cyanotic; child almost insensible to pain for some time; pupils contracted.	24	15 m. after birth, 120; 2 h. after, 130.	96½°; 94½°.	15 m. after birth, 40; 5 h. after, 60.
7	1 L. O. A.	12 hrs.	2 hrs.	7 h. 30 min.	Pulse decreased, 84 to 75; respiration from 28 to 18; pupils normal but inactive; facies darkened; marked cutaneous itching; sleepy.	Suspended animation, some minutes before it began to breathe.	32	30 m. after birth, 112.	98°.	30 m. after birth, 58.

8	1 L. O. A.	10 hrs.	2½ hrs.	7¼ hrs.	No apparent permanent effect upon pulse or respirations; marked cutaneous irritation; face flushed.	Suspended animation; resuscitated in a few minutes.	36	15 m. after birth, 50; 1 h. after, 48.	98°.	15 m. after birth, 50; 1 h. after, 48.
9	1 R. O. A.	6 hrs.	4 hrs.	9 h. 50 min.	No permanent effect upon pulse or respirations; throat dry; marked cutaneous irritation; very drowsy; face flushed.	Very cyanotic; pupils distinctly contracted, but breathed immediately and cried.	25	10 m. after birth, 54; 30 min. after, 52.	100+°.	10 m. after birth, 54; 30 min. after, 52.
10	3 L. O. A.	4½ hrs.	25 min.	1 h. 55 min.	No apparent effect, except pupils somewhat contracted, and feels sleepy; face somewhat flushed.	Very cyanotic; pupils contracted, but breathed immediately.	12	10 m. after birth, 60; 40 min. after, 44.	98°.	10 m. after birth, 60; 40 min. after, 44.
11	1 L. O. A.	24 hrs.	1¼ hrs.	11¼ hrs.	Pulse reduced from 90 to 66; respirations, 28 to 16; marked cutaneous irritation; pupils contracted; face dusky.	Suspended animation; very cyanotic; during first eight minutes gasped four times, twelve minutes before respiration established; dull, drowsy, and insensible to pain; cord once around neck loosely.	20	25 m. after birth, 128.	97+°.	25 m. after birth, 36.
12	1 L. O. A.	22 hrs.	3¼ hrs.	3¼ hrs.	Pulse, 88 to 80; respirations not materially affected; pupils contracted; almost anæsthetic to pain; face flushed; pupils contracted.	Suspended animation; breathed once in a minute and a half; next minute artificial stimulus, 16 times; next minute, being left alone, breathed once; almost insensible to pain; very cyanotic; pupils small; blood dribbled from cord; cord once about neck loosely.	12	10 m. after birth, 80; 20 min., 166.	100°.	Not noted.
13	1 R. O. A.	6 hrs.	1½ hrs.	2 hrs.	Pulse reduced from 84 to 80; respiration from 30 to 26; pupils contracted; face flushed.	Suspended animation; did not breathe safely for three minutes.	15	5 m. after birth, 140.	94+°.	5 m. after birth, 48.
14	1 L. O. A.	16 hrs.	5½ hrs.	12½ hrs.	Pulse reduced from 104 to 88, but varied between this and 94; respiration from 26 to 20; pupils contracted; face flushed; sleeping, and almost anæsthetic to pain; ergot administered, but no effect on pain.	Very cyanotic; respirations catching and slow; increased irregularly for 20 minutes; pupils contracted; insensible, except to rough handling.	24	30 m. after birth, 148.	99+°.	30 m. after birth, 70.
15	7 R. O. A.	20 hrs.	2 hrs.	4 h. 10 min.	Pulse reduced from 124 to 108; respirations, 28 to 18; pupils contracted; face flushed; cutaneous irritation; almost anæsthetic to pain.	Animation suspended; very cyanotic; did not breathe for five minutes, then gasped once; 8th minute, breathed 36 times; 9th minute, cried out and stopped breathing; resuscitated, and 11th minute breathed 46 times; 18th minute, pulse, 106; resp., 26; pupils not contracted, and but slightly sensible to gas-light; was indifferent to rough handling, washing, and dressing; cord once around the neck.	15	8 m. after birth, 106; 1 h. after, 116.	94°.	8 m. after birth, 36; 1 h. after, 48.

These cases are almost a repetition of the others I reported, and seem to me to indicate something more than mere obstetric accident in their occurrence. The phenomena in the new-born were so marked, and followed so persistently the administration of the drug to the mother in quantities which insured a positive degree of narcosis, that I can only adhere to my former opinion that the administration of morphine to the degree of producing its physiological phenomena in the mother will invariably produce a *relative* degree of narcosis in the new-born. That we are enabled to determine what is the relative extent of manifestations to be expected from a given amount of the drug, is at present impossible, from the few observations which have been made. The effect of the drug is modified, as we all know, by individual idiosyncrasy, dependent upon many varied, inherited, and acquired conditions. These we are unable to determine in any given case where we may choose to use the drug. The object of my first observations was *not* to show that morphia was an improper agent to use under any circumstances in labor, but simply to test the proposition held and taught by many—that, so far as the life of the new-born child is concerned, it is a perfectly safe remedy used to its fullest physiological extent—in other words, that it is as free from danger to the neonatus as is the administration of ether or chloroform. So far, my former observations have not been negatived. Dr. Beckwith failed in producing narcosis in the children born under his experimentation, simply because, as Dr. Lusk states, “None of them (the mothers) showed signs of labored breathing or cyanosis. The respirations, the pulse, the size of the pupils appeared to be only moderately affected.” In other words, he did not push the drug to a sufficient extent to produce even its safe phenomena. I am not surprised at this result, for we had the same experience in cases where we failed to narcotize our patients visibly; but I am quite satisfied that I *can* so deeply narcotize the woman in labor as to dangerously jeopardize, and even destroy the life of the child. I have done this. I thoroughly agree with Dr. Lusk, “that the propriety of its (morphine) use is to be determined by obstetric considerations;” but I cannot, from the standpoint of the observations made by Fehling, Kormann, Hennig, Ahlfeld, Thomas, Estabrook, Townsend, Parsons, and myself, feel, with Dr.

Lusk, that "there is no reason to apprehend any direct effect to the child from morphia hypodermically administered to the mother during labor;" on the contrary, so far as we can judge by the evidence submitted, I am more convinced than ever that it is a dangerous remedy when administered without a regard to its effect upon the mother, and in the belief that it is positively powerless to do harm.

In the doses usually administered, and in the conditions of labor tolerating unusual quantities of anesthetics—quantities which, under ordinary circumstances, when an individual is not suffering great pain, and is not in a condition of *resistance* to its effects, would, in many instances, destroy life—it is, to a certain degree, a safe remedy, and generally a mere placebo; *but that it can, by injudicious or reckless administration, destroy fetal life during labor, I have no doubts at present.*

CLINICAL CASES.

A SECOND SUCCESSFUL CASE OF GASTRO-ELYTROTOMY.

PERFORMED BY

ALEX. J. C. SKENE, M.D.,

Prof. of Gynecology in the Long Island College Hospital, Brooklyn, New York.

(With two woodcuts.)

THE subject of this history is an unmarried Bohemian girl, 37 years of age. She became pregnant, but concealed her condition from her relatives, with whom she lived, up to the full period of gestation. This she was enabled to do by being herself very much deformed in body.

She was taken in labor on Tuesday, the 19th of June, 1877, and soon after the membranes ruptured; at least, this much was learned from subsequent inquiry. Her labor pains continued, but she did not disclose her true condition, nor did her friends suspect what was her trouble; but becoming alarmed at her

continued suffering, they sent for Dr. S. Schmitzer on the morning of Friday, the 22d. The doctor found that she was pregnant at full term. The membranes were ruptured, the liquor amnii completely drained off, and the uterus contracted firmly round the child. The dilatation of the os uteri was only sufficient to admit the point of the finger.

The patient was much below the average size, emaciated, her complexion sallow, and her skin dry, and ill-conditioned in appearance. There was a well-marked forward curvature of the spine in the lumbar region; the sacrum was nearly straight, and formed a right angle with the axis of the spinal column



FIG. 1.

(see Fig. 1); the symphysis pubis was deeper than normal, being about two inches. The antero-posterior diameter of the superior strait was said by Dr. Schmitzer to be one and one-

fourth inches, and I am confident that it did not exceed one and one-half inches. The thighs were flexed to nearly a right angle to the body, and held there by ankyloses of the hip-joints (see Fig. 2). The knees could not be separated more than an inch and a half. The left lower extremity was four and three-fourths inches shorter than the right. A number of deep scars about the hips indicated the previous existence of large abscesses. These, existing in connection with the ankylosis, led to the conclusion that she formerly had had hip-joint disease of both sides.

Dr. S., finding the conditions described, satisfied himself that normal delivery was impossible. He then called Drs. Frickenstein and Weber to see her in consultation. These gentlemen agreed with the doctor regarding the deformity and the difficulties in the way of delivery.

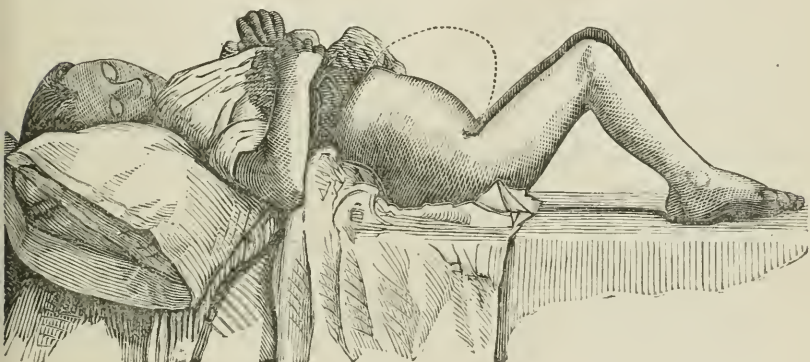


FIG. 2.

I saw the patient with Drs. Schmitzer and Alexander Hutchins at six P.M., on Friday, the 22d. She was then partially relieved from pain by a dose of morphine which was given to her in the afternoon. The os uteri was still undilated beyond about half an inch. From the character of the presenting portion, as observed through the walls of the uterus, it was presumed to be the vertex.

In consultation we agreed to first dilate the cervix, and then deliver by Gastro-elytrotomy; but as the patient was not having severe pains, and we were not then prepared to operate, we concluded to wait until morning, when we would have day-

light. In the meantime dilatation of the os could be attended to. Early on the following morning, Saturday, Drs. S. and H. began an artificial dilatation of the os, which was found to be a most difficult task. Owing to the deformity of the patient, the cervix was flexed backward so as to bring its axis to a sharp angle with the axis of the uterus, and there was not room enough in the pelvic cavity to permit bringing the cervix forward on a line with the body of the uterus. It was therefore almost impossible to pass the dilator through the internal os. After prolonged manipulation, dilatation to the extent of two and one-half inches was effected.

At ten A.M., on Saturday, the 22d, four days from the time labor began, we were prepared to operate. In selecting this method of operating we were guided by the fact that craniotomy was impossible under the circumstances, not alone because of the narrow superior strait, but also from the fact that the axes of the uterus and vagina were at right angles, which made it impossible to use the necessary instruments for delivery in that way. This statement will be indorsed by Drs. Schmitzer and Hutchins, who tried to dilate the cervix. Caesarian section was suggested by the difficulties in the way of gastro-elytrotomy; but we preferred to encounter the obstacles rather than open into the peritoneal cavity and uterus of the patient. The condition of the patient just before the operation was not encouraging. Her skin was dry and hot, tongue coated, temperature $102\frac{1}{2}^{\circ}$, pulse 98. Indeed, the operation was beset with difficulties from beginning to end, and on that account I will give the several steps in brief detail.

To reach the point for incision parallel to and a little above Poupart's ligament, it was necessary to raise up the abdomen and retract the soft parts of the thigh as much as possible. This can be understood by referring to Figure 2, in which the dotted line shows the relation of the abdomen and thigh before delivery. The parts being thus brought into view, the abdominal walls were divided through the tegumentary and muscular layers. This was accomplished without much trouble; but on reaching the region of the peritoneum, I encountered the products of a previous inflammation, which obscured all the normal anatomy. I have always believed that a previous pelvic peritonitis would greatly complicate this opera-

tion, and have dreaded that such a case might fall to my lot, and in this case I fully realized my expectations. The peritoneum, iliac fascia, bladder, and vagina were all glued together by plastic material, which rendered the normal tissues unrecognizable. This, and the space between the flexed thigh and the large abdomen being very narrow, made the difficulty of manipulating very great. The vagina also was narrow and unyielding, so that it could not be forced upward to guide us in the right direction. In this part of the operation there were three points of danger to be guarded against:

First.—Wounding the peritoneum. There is no danger of doing this when the parts are normal, for then the peritoneum can be easily recognized and lifted up from the other tissues with perfect facility; but in this case everything was changed in appearance and character, and in place of easy-sliding tissues we had lymph and adhesions, both difficult to manage.

Second.—I had learned, by former experience, that to open the vagina too near the symphysis pubis gives rise to the danger of the incision extending into the bladder during delivery.

And *Third*, if the incision is made too near to the walls of the abdomen, there is danger of wounding the circumflexa ilii artery.

We succeeded in avoiding the peritoneum and important vessels, but unfortunately the bladder, which was drawn upward and to the right by old adhesions, was wounded. That is not very surprising when it is remembered that in making this portion of the dissection I was guided mostly by the sense of touch, and the parts were so crowded together and changed in appearance as to be almost unmanageable. The point at which the bladder was wounded was just opposite the anterior superior spinous process of the ilium, a place where one would not expect to find it.

When the cervix uteri was reached through the opening in the abdominal wall and vagina, we found dilatation sufficient to admit the points of the four fingers. Manual dilatation was then made and soon completed. The only difficulty experienced was in getting the fingers between the child's head and the uterus, so firmly was the latter contracted. The head presented transversely with the occiput to the left side. Delivery by version has been advised in this operation, and was thought of in

this case, but was ruled out as being impossible, owing to the firm contraction of the uterus. Deciding to deliver with the forceps, we proceeded to use them. Here we encountered another perplexing difficulty. The thigh stood up in front of the opening in the abdominal wall and the os uteri, and prevented the introduction of the instruments. After some awkward manipulating, we succeeded in grasping the head, and then delivery was easy and speedy. The placenta came away without trouble. There was very little hemorrhage; the wound was closed with silver sutures and dressed with cotton wadding, secured by adhesive straps.

The child was markedly asphyxiated, due, no doubt, to the continued contraction of the uterus so long after the escape of the liquor amnii. It was restored after the vigorous employment of artificial respiration. It was well developed, healthy in appearance, and weighed $7\frac{1}{2}$ pounds. Drs. S. Schmitzer, Hutchins, Corey, Cushing, and Hunt were present and gave their counsel and assistance in the operation.

She recovered from the anesthetic promptly, and showed no symptoms of shock, nor did she complain of pain or discomfort. On the day following the operation her pulse was 94, and her temperature had fallen from $102\frac{1}{2}$ (which it was at the time she was delivered) to 100° . The catheter was used frequently in order to keep the bladder from being fully distended.

Drs. S. and H. observed that, after a few days, the quantity of urine retained in the bladder became less and less, and at the same time the urine was seen to escape from the vagina.

The introitus vaginae was small and firmly contracted, which prevented free drainage, causing the urine to accumulate in the vagina and well up through the abdominal wound.

A rubber tube, perforated with small holes for about two inches at one end, was introduced into the vagina for the purpose of draining off the urine. It answered well, and for twenty-four hours the urine flowed continuously and freely into a urinal, and all appeared to progress well for a time. The patient unfortunately was ignorant, obstinate, and unmanageable. Her mental obliquities and angularities were, like those of her body, well marked. After a day or two she became dissatisfied with the drainage tube and would not let it remain any longer in the vagina. Every time that the doctor

placed it there she would withdraw it and throw it away, and no argument could persuade her to do otherwise. The urine, from this time, flowed freely from the abdominal wound, and occasionally from the vagina. Owing to the disagreeable disposition of the patient, it was impossible to keep her clean or comfortable. Her appetite was good, her bowels moved regularly, she slept well on small doses of morphine at bed-time, and her pulse and temperature were normal, but it was difficult to keep her wounds in good condition. She was cared for by her sister, who, although willing, was not skilled as a nurse, and, besides, she had her household duties to perform.

Such being her surroundings, we concluded to send her to the hospital, and on the fifth of July, two weeks after delivery, she was taken there. She made the journey to the hospital, about three miles, very comfortably. When admitted, her condition gave evidence of want of proper nursing. The wound was healed except at the outer portion near the anterior superior spinous process of the ilium, where the fistulous opening was. Around the opening the parts were foul and covered with a superficial slough. Most of the urine escaped from this opening. There was also a free purulent discharge.

She was placed upon tonic doses of quinine, and a little morphine at bedtime to relieve an uneasy restlessness. The wound, vagina and bladder were kept thoroughly clean by the frequent use of carbolic acid and water. A stream was passed from the wound in the side through the vagina and then reversed. The bladder was also injected; the stream being carried in through the urethra and made to escape through the vagina and abdominal opening.

To keep the wound in the best condition for healing, a rubber tube was introduced into the fistulous opening in the side, and it made good drainage when the patient could be persuaded to keep it in place, but she often pulled it out. After a few days the house physician succeeded in passing a perforated rubber tube from the abdominal opening out through the vagina and left it there. This made perfect drainage. Sometimes the urine would flow from one end of the tube, and sometimes from the other, according to the position taken by the patient, and she was unable to remove this tube, which was a great advantage.

From this time the abdominal wound healed rapidly, and the drainage tube was finally removed about the third of August. The urine flowed then from the vagina only. To drain the vagina, a hard rubber bulb with a stem was used, which answered very well to carry off the water. The bulb was olive-shaped, and perforated closely with small holes. To the stem of the bulb a small flexible tube was attached which conveyed the urine to a vessel. A rubber urinal was obtained for her which she could wear while walking around, but for some reason, which no one could understand, she would not use it.

Most of the time since the operation the bladder has retained more or less urine, and at this stage of her progress the house physician noticed that it began to retain more and more, showing that the fistulous opening was closing. Improvement in this direction continued until the 12th of Aug., when the bladder had fully regained its power of retention, indicating that the fistula had closed.

At this date (August 12th) her health is as good as it ever was. In short, the recovery of the mother is complete, and the baby, which was left at home, prospered for a time, but died when eighteen days old, from bad feeding and care.

The notes here given of the case while in hospital are brief extracts taken from the clinical records kept by the resident physician, Dr. McPharlin, to whose skill and constant care her complete recovery is largely due.

In reviewing this case of gastro-elytrotomy (the second successful case on record, so far as I know), I may say that a more unfavorable case for operating could not well be imagined.

The conditions of the patient in every particular relating to the operation, and the want of facilities for after-treatment, were such as to thoroughly test the merits of this method of delivery. Certainly, greater difficulties than were here encountered are not likely to occur in the future history of this operation.

CEPHALIC VERSION BY THE EXTERNAL BI-POLAR METHOD
—ARREST OF PROFUSE POST-PARTUM HEMOR-
RHAGE WITH TINCTURE OF IODINE.

BY
JNO. S. COLEMAN, M.D.,
Augusta, Ga.

IN the AMERICAN JOURNAL OF OBSTETRICS for February, 1875, Dr. Jas. D. Trask, of Astoria, N. Y., in an able article on "Injections of Tinc. of Iodine into the Cavity of the Uterus," advocates the use of this agent in preference to the tinc. of iron. The dangers attending the use of iron are shown by very full quotations from the Transactions of the Obstetric Society of London for the year 1873.

As his paper is a lengthy one, and will well repay careful study, I shall content myself with a short quotation and a statement of his "recapitulation."

"In comparison with iron, tinc. of iodine has the advantage, so far as we know, of being perfectly safe—at any rate, free from the evils incident to the employment of iron.

"Besides this, we have the direct antiseptic influence of the iodine upon the uterine and vaginal mucous membrane. The application of iodine to the lining membrane of the uterus is, probably of all things, the surest means of counteracting a tendency to absorption of septic matter into the system after delivery. Since adopting the practice of injecting tinc. of iodine after operations upon the interior of the uterus, Dr. Emmet has not encountered a single case of septicemia. As contrasted with the salts of iron in this respect, it would seem as if there could be no room for hesitation in the choice. From the local action of iodine, not only is nothing to be feared, but even advantage to be anticipated, while from the local action of iron much may be apprehended. As an excito-motor agent, iodine is probably at least equally good, while incapable of causing the formation of thrombi in the uterine vessels.

"In view of these facts, one would feel justified in resorting to the iodine earlier than the iron, and in this respect also an

advantage may be gained for the patient, since the use of iron is expressly limited to cases deemed hopeless under ordinary management.

"In recapitulation, we may briefly say that we have sought to show :

"1. That a very considerable proportion of cases in which the injection of salts of iron has apparently saved life, have been those in which it accomplished this end, not in virtue of local styptic action, but because of its power to excite reflex action when cold, friction, pressure, etc., have failed.

"2. That when it produces coagulation of blood in the orifices of the blood-vessels, there is danger that the coagulation may follow the vessels into the substance of the uterus, producing dangerous thrombi, and that the blood already collected in the cavity of the uterus also may become converted into a hard, intractable coagulum which the uterus cannot expel, and which may, after a few days, decompose and give rise to septicemia.

"3. That there is evidence for believing that, as an excitor of dormant reflex action, tinc. of iodine may be substituted for the iron with positive advantage, from its efficiency as an excitor, and from its antiseptic properties."

On Friday, the 3d of August, I was called to attend Mrs. D., a multipara. On making a vaginal examination, I found the parts soft, moist, and dilatable, the os about the size of a silver dollar, but failed in touching any portion of the child.

I had attended this patient in two previous confinements, and delivered her of enormous children (the first was weighed by the nurse and a lady friend, who said that his weight was $15\frac{1}{4}$ pounds; the second, weighed by myself, $13\frac{1}{2}$ pounds). I now suspected a transverse presentation. Careful palpation of the abdomen and auscultation verified my suspicions.

The fundus of the uterus was remarkably broad and flat. I found the child obliquely placed, the head in the left cornu of the uterus, and the breech a little below the umbilical line (not fully in the iliac fossa).

Standing beside the bed, I placed the palm of my left hand above the head of the child, and my right palm below the breech. With steady pressure and a gliding movement, after

the expiration of about twenty minutes, I succeeded in converting it into a vertex presentation.

I directed the husband to firmly hold the lateral walls of the uterus while I ruptured the membranes.

The head soon became engaged in the R. O. A. position.

The second stage of labor was very severe, and I had to resort to chloroform before its completion. As is my habit, as soon as the head passed the vulva, I directed a bystander to use compression, after Crede's method. Delivery was for a long time delayed, in spite of my best efforts, by failure of rotation in the shoulders.

The child, a female, was still-born, and was with difficulty resuscitated.

The placenta, a very large one, was within the internal os, and I had to "unbutton" it.

My patient is what some authors have termed "a bleeder," and a most profuse hemorrhage now occurred.

It poured from the bed upon the floor in such a stream as to spatter my pants.

Kneading, turning out of clots, the internal application of ice, and one and two-drachm doses of Squibb's fluid ext. of ergot, to the extent of five drachms, failing to control the flow, I determined to use the tinc. of iodine.

I made a solution of a wineglassful of the iodine to four wineglassfuls of water, and through Chamberlain's large glass tube introduced to the fundus, injected about half of the fluid.

The result was most gratifying. The expulsion of the clots and the prompt and permanent contraction of the uterus was the reward of this, my first trial of the tinc. of iodine in post-partum hemorrhage.

After diligent search, I am unable to find the record of any case in which iodine has been used for the arrest of post-partum hemorrhage since the publication of Dr. Trask's article.

I will here state, that while auscultating and palpating the abdomen, my patient said to me, "What is the matter, doctor?" I replied, "You have a cross-birth, but it can be corrected." She at once said, "My husband and I have known this fact for weeks."

The child weighed, nude, twelve pounds.

This is the ninth labor at full term.

To-day, August 14th, the twelfth after delivery, she says, "I have never before done so well."

I sincerely trust that this record may be the means of recalling to some members of the profession Dr. Trask's earnest appeal, and to others of demonstrating the value of iodine in post-partum hemorrhage.

A CASE OF SIMULTANEOUS ENTRANCE OF BOTH HEADS OF TWINS INTO THE PELVIS.

BY

W. F. REED, M.D.,
Kalida, O.

ALLOW me to communicate a brief account of a case of simultaneous entrance of both heads of twins into the pelvis, as additional to those already reported by Dr. Reinmann, of Kiew.

Mrs. V., multipara, second pregnancy, age 24 years, was confined July 1, 1874. The first child was born to the umbilicus when I arrived. Finding a second head in the pelvis, lower down than the first, I tried to push it up, but failed. In consultation with Dr. J. B. Vail, who had been with the case from the beginning of labor, it was agreed to apply the forceps to the second head, but the pains now came on with greater force, and we decided to wait, and after thirty minutes' hard labor, had the satisfaction of seeing both children expelled without the use of instruments. Both children were still-born. Efforts at resuscitation were made, but without effect. The children were not weighed, but were of good size, and would weigh probably six pounds each. The mother sustained no injury, and made a good recovery.

CORRESPONDENCE.

THE NORMAL ANATOMY OF THE VULVO-VAGINAL ORIFICE.

BY

H. OTIS HYATT, M.D.,
Kinston, N. C.

(With two woodcuts.)

DR. PAUL F. MUNDÉ:

Dear Doctor—After carefully reading your note to my paper on “The Normal Anatomy of the Vulvo-vaginal Orifice,”¹ I am of opinion that I failed to make myself understood when I asserted that the perineal body was four-sided. I will now attempt to describe that body, and at the same time answer your criticisms as best I can. I regard the point of insertion of the hymen on the posterior vaginal wall, which point is always within the grasp of the sphincter vaginae muscle, as the dividing line between the vulva and vagina. This point is also the highest point in the perineal body, as shown in the accompanying diagram, which represents the parts about one-half life size. (Fig. 1.) In your note you say that the perineal body is triangular, the superior angle of which projects beyond the hymen or its remnants to the extent of one-half to three-fourths of an inch, such projection forming the more or less shallow fossa navicularis. This part described by you, instead of being the superior angle of the perineal body, is, in fact, its fourth side. If you make the fourchette the limit of the vagina, the fossa navicularis forms part of the posterior vaginal wall; but if we consider the point of insertion of the hymen as the dividing line between the vulva and vagina, the fossa navicularis, or fourth side of the perineal body, is outside of the vagina, and goes to form part of the vulva.

One of the most convincing proofs that my idea is a correct one is the fact of the inevitable laceration of the vulvo-vaginal

¹ See last April number.

orifice seldom extending through the fourchette. Now, if the fourchette was the highest point of the perineal body, it would be impossible for this laceration to occur without the fourchette being torn, and the laceration extending down towards the

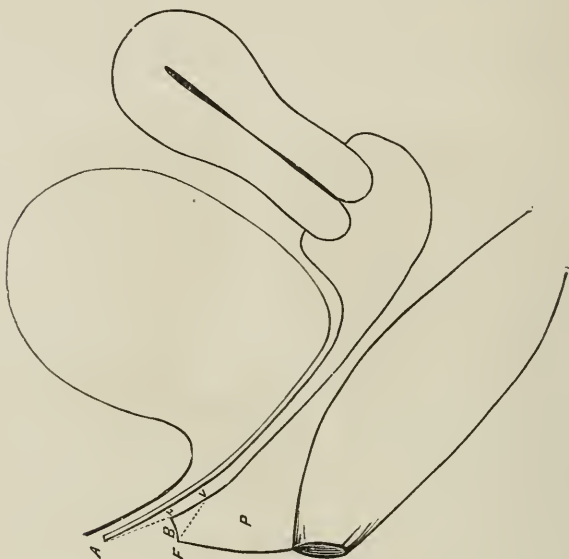


FIG. 1.

- A. Meatus Urinarius.
- P. Perineal body.
- F. Fourchette or frenulum.
- B. Fossa Navicularis, and 4th side of the perineal body.
- H. Insertion of the hymen, limit of the vagina and summit of the vulvo-vaginal angle FHV.
- FV. Base of the vulvo-vaginal angle, and base of the inevitable laceration of the vulvo-vaginal orifice of a primipara. The dotted line from H towards A represents the direction of the hymen.

anus. If a Sims speculum is hooked under the pubes of a woman who has borne a child, oftener than otherwise there will be seen a diamond-shaped scar on the floor of the ostium vaginae. One point of the scar is in front of the fourchette, the carunculæ on either side will mark two other points, while the fourth point extends down the floor of the vagina. (Fig. 2.) After the inevitable laceration the vagina and vulva are made continuous, and then the perineal body assumes a triangular shape, because the vulvo-vaginal angle has been torn through.

In my description of the situation of the meatus urinaris I committed a blunder, to which you call attention in your note. In my paper I use the following language: "If a virgin with the hymen intact is placed upon her back, and the labia majora and nymphæ gently separated, the hymen will be seen to raise against the anterior portion of that part of the ostium vaginae which is traversed by the urethra, and is almost always one-

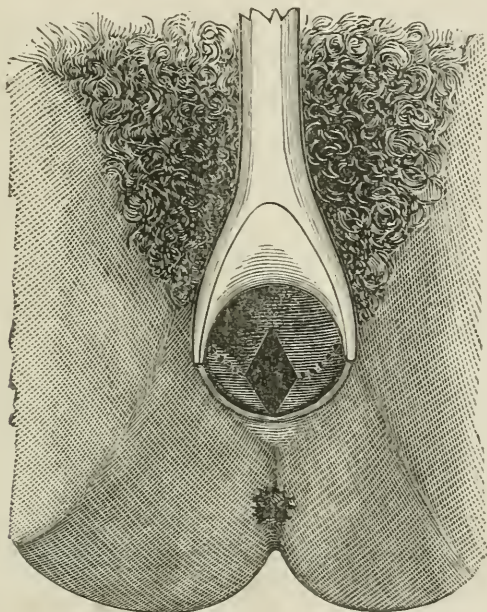


FIG. 2.

half to three-quarters of an inch distant from the meatus urinaris, which leaves at least one-half of the urethra outside or external to the vagina. The hymen, which separates the vagina from the vulva, is invariably situated within the grasp of the sphincter vaginae muscle, and is distant posteriorly from the fourchette or frenulum from a quarter to half an inch." When I wrote the above, I was thinking of the appearance of the parts of the last virgin I had examined, whose hymen was little more than a semi-lunar band stretched across the ostium vaginae, and consequently was a deviation from the usual condition of the parts. Now, my blunder consisted, not in a faulty

description of the position of the meatus urinarius, but of the shape and direction of the hymen. The hymeneal circle or semicircle generally extends from the summit of the vulvo-vaginal angle forward and upward towards the meatus urinarius, all except its posterior insertion being in the vulva, *i. e.*, if the summit of the vulvo-vaginal angle, which is within the sphincter vaginae muscle, be regarded as the limit of the vagina.

I think I have clearly established as true, what I asserted in my paper, but at the same time I am aware that I may be mistaken, and would be glad to hear from other members of the profession in regard to the subject. The anatomy of the vulvo-vaginal orifice has never received the attention from anatomists its importance deserves, and for this reason I think there ought to be some uniform standard of description adopted, at least so far as the points under discussion are concerned. I hope you will call upon your readers to prove or disprove my assertions. If they are true, they will certainly stand testing; and if untrue, there is no one who would be more pleased than I to see them fall to the ground.

Yours truly,

H. OTIS HYATT.

MAY 8, 1877.

THE POSITION OF THE HYMEN IN THE NEGRO RACE.

BY

A. G. SMYTHE, M.D.,
Baldwyn, Miss.

[TO THE EDITOR OF THE JOURNAL OF OBSTETRICS.]

DEAR SIR:—In the January number of this Journal, at page 32, and in the April number, at pages 253 and 259, are articles upon the anatomical difference in the location of the hymen between the negro and the white race. The first by Dr. Ed. B. Turnipseed; the second by Dr. H. Otis Hyatt; and the third by Dr. C. M. Fort.

I cannot now take the time to notice the foregoing articles separately. What I wish to do, in as brief a manner as possible, is to call attention to what I am convinced is an error

these gentlemen have fallen into. Whilst I am free to accept the assertion that each and all of these gentlemen may and doubtless have found many cases in the negro where the hymen occupied a deeper-seated attachment than is generally considered its normal situation in either race, the same may be said of the white race. In an extensive country practice of nearly forty years upon both races, I have found but little uniformity in the location of the hymen in either race. The entire absence, or any trace of the same, is quite common, so much so that, had they all occurred consecutively in the practice of a new practitioner, he would have concluded that the hymen existed only in the imagination of the anatomist. Much might be said in this connection upon this subject, but I forbear, and will proceed to give a case in point.

Was called to a negro girl, 16th March, 1876, aged thirteen and a half years; a pure negro, moderately well developed. Had been complaining, from time to time, for four or five months, with pains in the back and hips, and painful micturition. Upon examination the hymen was found imperforate, thick, dense, and strongly attached at the external opening of the vagina. I pronounced it a case of obstructed menstrual discharge; made an opening, which gave immediate relief. But the attachment is entire up to this time.

I call to mind two other cases, in pure negro girls, where it was necessary to examine them after an attempt to have criminal intercourse, and remember vividly the appearance and location of the hymens, both of which were firmly attached to the external opening of the vagina.

Whilst I admit that I have not been able to array such a number of cases (only three) as were offered in the articles in question, and further, while the cases offered are negative in position, they are positive in proof that the position taken is untenable.

Yours truly,

A. G. SMYTHE, M.D.

BALDWIN, Miss., 15th May, 1877.

EDITORIAL.

WITH the present number the JOURNAL OF OBSTETRICS completes its tenth volume and year. Steadfast perseverance, earnest endeavor, and a conscientious adherence to the principles laid down by the Editor in his inaugural editorial, three and one-half years ago, have succeeded in securing the active interest and co-operation of the profession in all parts of this country, and in gaining for the JOURNAL a prominent position abroad. It is with feelings of sincere gratification that the Editor feels himself justified in saying, that the hopes then expressed have been to a great extent realized. The Editor desires to acknowledge his deep obligations to the medical profession for the constant and generous support extended him in his endeavors to maintain and elevate the standard of the JOURNAL, a support which he trusts will still be accorded with equal liberality in the future.

The steady increase in the circulation of the JOURNAL from year to year, while conveying the assurance of the approval by the profession of the manner in which it is conducted and equipped, appears now to warrant the publishers, in accordance with the long entertained desire of the Editor, in increasing the size of the JOURNAL, particularly with the view of devoting more space and attention to the hitherto, for want of space, somewhat neglected department of Diseases of Children. Arrangements have been made by which in the future regular quarterly abstracts, chiefly foreign, on the affections peculiar to infancy and child-

hood will appear from the pens of gentlemen well known in that specialty. The profession generally are invited to contribute original papers on the same topics.

It is also intended to devote regularly a portion of this additional space to abstracts from foreign journals on Obstetrics and Gynecology, which during the past year have been crowded out by press of other and unpostponable matter.

Abstracts, as well as Reviews of Books, pertaining to the three branches embraced in the JOURNAL will be acceptable, in addition to those furnished by the regular staff, and will be published under the signature of the reviewer. A further liberal contribution of well prepared and scientifically written articles is requested.

Beginning with the first of January, 1878, the JOURNAL will, therefore, be enlarged by 48 pages in each number, making 224 pages in all—a volume of 896 pages each year—without increase of price. The Editor is confident, that this effort on his part and that of the publishers to increase the value and scope of the JOURNAL will meet with the hearty endorsement and co-operation of the profession.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Reported by MATTHEW D. MANN, M.D., Secretary.

Stated Meeting, February 6, 1877.

The President, DR. T. G. THOMAS, in the Chair.

DR. HUNTER presented a

SPECIMEN OF DYSMENORRHEAL MEMBRANE.

The patient had been married eight years. Previously she had been quite well, but since her marriage she has passed portions of membrane every month. For the first three days of the period she suffers most intensely from dysmenorrhea, then the membrane comes away, and for the remaining three days of the period there is no pain. The uterus seems to be perfectly normal in every other respect. Dr. Hunter asked the experience of the Society in the treatment of such cases, and whether any one had observed pregnancy to follow a cure.

DR. FORDYCE BARKER mentioned having seen several cases. In one the patient had been married six years when he first saw her, and was childless. The pain she suffered at her periods was worse than that of an ordinary childbirth. He painted the uterine cavity with nitric acid every month, for a while. After the first application she improved, but the improvement was not permanent. He then dilated the cervix and passed in iodoform pencils every third day. After this treatment was begun she ceased passing any membrane, and last autumn, after a year of treatment, she became pregnant.

DR. THOMAS said that he had reported to the Society, on a previous occasion, three cases. Two of them were not at all benefited by treatment. In the third case he found an endometritis existing, with descent of the uterus from its weight. He dilated the cervix and painted the endometrium with tincture of iodine fort., and now the woman is pregnant.

DR. THOMAS presented a

PEDICULATED TUMOR OF THE PUDENDA.

The tumor had been growing a long time and reached down to the middle of the thigh. The pedicle was the size of three fingers and involved both labia of one side. Fearing hemor-

rhage, he had cut through the skin and cellular tissue with the galvano-cautery knife, and then enucleated the tumor. On section it was found to contain a cyst filled with a thin, watery fluid, and to be made up of fibrillary connective substance, which was very œdematous. He asked how many members had seen similar cases. He himself had seen but one other, the pedicle in that case being very long, the tumor reaching down to the knee.

DR. BARKER reported three cases, and DR. BYRNE two, in one of which he had removed the tumor.

Stated Meeting, February 20, 1877.

The President, DR. T. G. THOMAS, in the Chair.

DR. JACOBI presented a

CASE OF A BOY WITH PARTIAL ABSENCE OF THE RIGHT PARIETAL BONE,

and gave the following history :

About one year ago the boy was struck in the head by a falling board. The skull was fractured and the boy lay unconscious for a long time. Many pieces of bone were removed, together with a portion of brain substance as large as a hen's egg. The wound remained open a long time. The defect now left is two by three and a half inches, and is covered in part by cutis and in part by a thin transparent membrane, made up of both the dura and the pia mater. The boy is now perfectly well.

The pulse-beat can be distinctly seen in the depression over its whole surface ; also the respiratory movements. The act of coughing, or any forcible expiratory movement, causes the covering to become very tense and full. The boy is now wearing a wire net to protect the brain from external injury.

DR. CHAMBERLAIN presented a

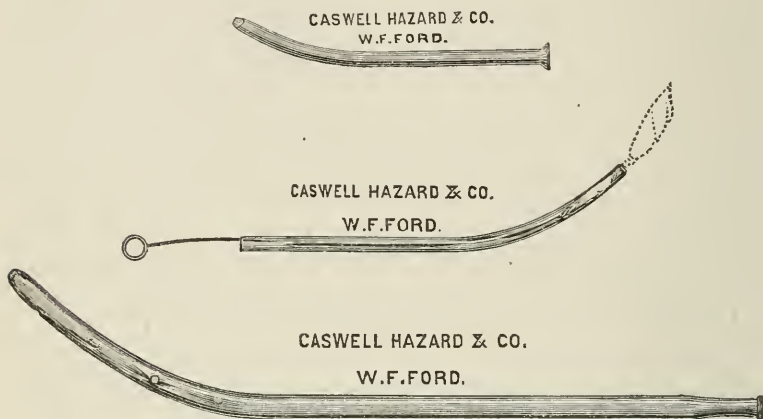
SERIES OF THREE GLASS INSTRUMENTS,

which he claimed to possess certain advantages over those in common use. First, a glass catheter similar in shape to an ordinary metal female catheter. This was meant for office use, or for use in specific diseases, where a new one should be employed for every case.

The second, a uterine applicator. This consisted of a glass tube, a little heavier than the catheter, and curved like a Simpson's sound, and having a slender whalebone rod in it, which

might be wrapped with cotton. The instrument is intended for use after dilatation to prevent the medicinal agent from being lost in the cervical canal before it reaches the cavity of the uterus proper.

The last of the series is an instrument for washing out the puerperal uterus. It consists of a heavy bent tube, about one-half inch in diameter, closed and rounded at one end and



tapering at the other, to allow of a small rubber tube being attached. Near the curved closed end are four holes, one inch apart, arranged in a spiral around the tube. The advantages are that it can be so easily and thoroughly cleansed. It makes the operation easy, with a minimum of danger and a minimum of irritation and inconvenience. In the puerperal state there is no need of introducing the finger; it is enough simply to depress the handle, when the tube is in the vagina, and it will easily and readily pass into the uterus. Some doubt having been expressed as to the practicability of this, he would add that during the last term of his service in the maternity wards of Charity Hospital, the tube was employed upon about a dozen different women, and its use was repeated many times in some—in one case, as late as the fourteenth day after delivery.

In every case the uterus was entered without any aid from the finger.

Dr. WALKER presented a

PLACENTA WITH THE HISTORY OF CONCEALED HEMORRHAGE.

Mrs. M—— had been pregnant four times, one still-born

child and three miscarriages. When first seen she was in the eighth month of pregnancy. The night before she had been quite well, but early on the following morning had had some pain and a slight flow from the vagina. The fluid which passed resembled the liq. amnii, was pinkish in color, and considerable in amount. When the Doctor reached her she was in an alarming condition. The uterus was larger than it had been, hard, painful, and in a state of tonic contraction. There were no labor pains. He feared internal or concealed hemorrhage. An attempt to induce labor by the use of the warm douche and Barnes's dilators failed. Labor did not come on, but the symptoms improved, the pulse grew stronger and less rapid. The next day, at 2 P.M., a catheter was passed into the womb, and labor coming on early the following morning, she was delivered at 11 o'clock. The sac was ruptured by the finger during the progress of the labor, so that the fluid which had come from the vagina was not liq. amnii, but serum from the clots. The child was dead and macerated, and the placenta was followed by two handfuls of solid dark clots without hemorrhage.

The placenta was somewhat shrunken, and contained a number of yellowish nodules and a few clots.

DR. JACOBI remarked that the placenta had the appearance of being syphilitic. The nodules looked like gummata. The history also favored this view.

DR. WALKER said that there was no history of syphilis in the case. He had investigated the matter carefully.

At a subsequent meeting the pathologist, DR. MANN, reported that a careful microscopic examination failed to reveal any evidences of syphilis. The yellowish nodules were simply portions of the tissue which had undergone fatty degeneration.

DR. THOMAS read a

DESCRIPTION OF A NEW INSTRUMENT, THE SERRATED SCOOP, FOR
THE DETACHMENT OF SESSILE UTERINE FIBROIDS.

"I desire to bring before the Society to-night an instrument of which I have personally long felt the need, and which I hope and think will, in the future, fill a place of some importance. Instead of simply giving a description of it, I shall illustrate its character and uses by the relation of a case in which I have recently employed it, and exhibit it in connection with the tumor which was removed by its assistance.

In June, 1876, I was called by Dr. John Burke, of this city, to see with him Mrs. A., a lady forty-seven years of age, the mother of one child, aged nineteen years, who had been for four years suffering from profuse menorrhagia and

metrorrhagia. To such an extent had she been reduced by loss of blood that she was generally confined to her chamber, and suffered from œdema pedum, palpitation of the heart, and dyspnœa upon the slightest exertion. Her appearance was that of one suffering from an exaggerated degree of anæmia, which was rapidly growing worse from repeated and severe hemorrhages. The liver was found to be very much enlarged, as was likewise the spleen; the former, as we supposed, from fatty degeneration, and the latter from malarial poisoning.

Mrs. A. had been examined repeatedly as to the uterine condition during this period, and, twelve months before I saw her, Dr. Burke had discovered the existence of a submucous uterine fibroid, supposed to be as large as the egg of a goose. At no time up to June, 1876, did he consider her in a condition fit to admit of an effort at the removal of this, but at that time he called me to decide whether it would not then be possible.

When I first saw her, I found the uterus by conjoined manipulation as large as it would be in pregnancy at the fourth month, admitting the sound to a distance of five inches, and the tip of the index-finger, when force was used, so that a hard, pyriform tumor could be touched in the uterine cavity.

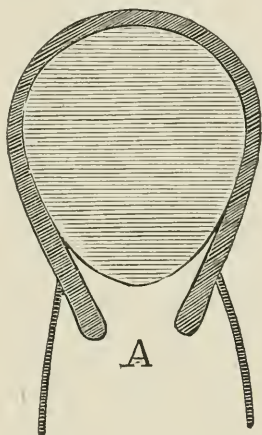
The patient was so much exsanguinated, so much exhausted, and her nervous system so profoundly depressed, that I decided against operation, and she was fully sustained by diet and fresh air, in the hope that a few months would so improve her state as to render operation possible.

I saw her several times after this with Dr. Burke, but, instead of getting better, she steadily grew worse, and in September general dropsy set in, affecting the peritoneal cavity, and the cellular tissue of the body. We now thought the case decided, and gave up all hope of removal of the uterine growth. In time, however, all the effused fluid disappeared, and, about the beginning of January, she was so far restored that the question of operation was again agitated. On the 15th interference was decided upon, and on the 28th the tumor was detached and removed.

So much has of late been said in this Society about the relative claims of different methods of removing uterine fibroids that, before going further, I will state my convictions upon the subject as clearly and succinctly as possible:

1. My impression is, that a decided and distinct line should be drawn between the treatment of uterine fibroids, existing with a dilated cervical canal, and those barricaded by a contracted orifice. Those fibroids hanging in the vagina are out of the present question entirely, for their removal is so simple

that the merest tyro may deal effectually with them. I speak only of intra-uterine growths when I say that they should be divided into two classes, the line of division being the dilatation or non-dilatation of the cervical canal. In the first case, the growth can be reached and generally removed if the operator have the requisite experience, boldness, and skill. In the second, none of these qualifications can make success secure, or ward off the element of danger. I regard it as an axiom that those operators will be most successful in these cases who most uniformly secure full dilatation of the cervical canal before resorting to obliteration of intra-uterine fibroid growths of large size.

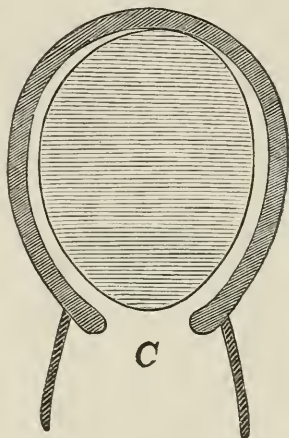


2. My rule for selection of procedure has long been this: If the tumor is very extensively attached, almost down to the os internum, for example, on all sides, I cut through the capsule, and either at once enucleate the growth, or do so slowly by exciting uterine contractions by ergot, and causing the uterus to exert its power to the same end. Having made an artificial os in the capsule, I force the uterus to give birth to the tumor through it. (Fig. A.)

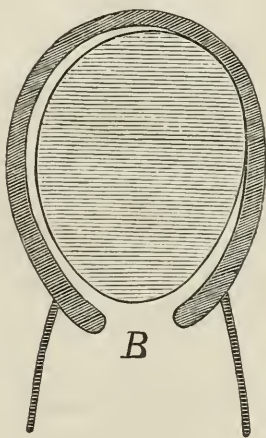
3. If the tumor be pediculated, I seize and drag it forth by strong forceps, sever the pedicle by scissors, the *écraseur*, or the galvano-caustic wire, and see that the uterus, if partially inverted, goes back to its place. (Fig. C.)

4. Should the tumor be neither so much nor so little attached, be a sessile growth, and yet not adherent to the greater part of the uterus (Fig. B), I resort to detachment, or, as it has been inappropriately, and, as I think, with some risk to

practice, called, "avulsion." For the proper performance of this latter procedure, no appropriate instrument has yet been devised, and I venture to offer one to-night which I feel very sanguine will answer all requirements.



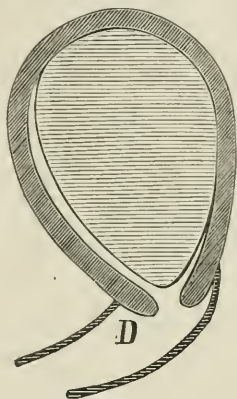
I would remark, in passing, that when the os and cervix are sufficiently dilated to allow the passage of the finger for the guidance of a flat, elastic steel or whalebone sound with a bul-



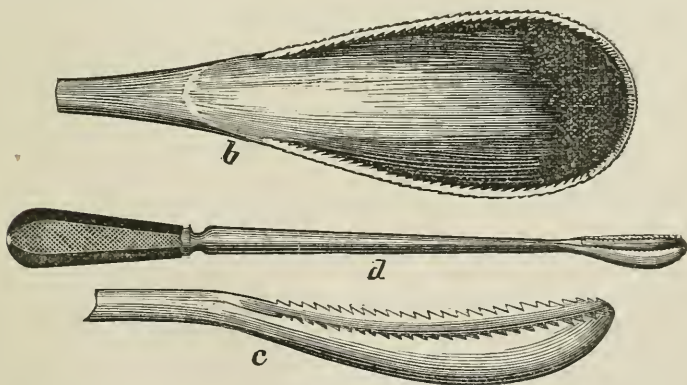
bous extremity, it is usually possible to make out the exact extent and position of the attachments. In Mrs. A.'s case, I used that which I now exhibit, and by it no doubt was left as to the

relations of the growth. This flat elastic strip was gently passed to the right of the tumor, the finger fixed upon it at the os externum, and a line drawn upon a sheet of paper, corresponding to it in length and curve. It was then passed on the other three sides, a similar record of it was made on the paper, and we had before us the size of the tumor and its attachments. Of course, the picture was not entirely accurate, but he who becomes an adept in this method will very soon learn to wonder at the degree of certainty to which he will attain.

By this plan the following picture was produced (Fig. *D*):



The tumor was free on the anterior wall alone; attached throughout the posterior to within one inch of the os internum.



SERRATED SCOOP FOR DETACHMENT OF SESSILE UTERINE FIBROIDS.

At mid-day, on the 28th of January, detachment and extraction were practised in the presence and with the assist-

ance of Drs. Burke, Walker, and Jones. The patient, being etherized, was placed in Sims's position, and his speculum was introduced. The cervix being then caught with a tenaculum, its lips were severed on each side, so as to open the way to the tumor, which could by the finger be felt above, before this was done, but now could be quite freely manipulated. A powerful vulsellum forceps was then firmly fixed in the growth, and securely locked. Then, with the serrated spoon or scoop, which I now show, *b, c, d*, the attachments to the uterus were rapidly severed.

I, as were also my assistants, was equally surprised and pleased at the rapidity, ease, and certainty with which the sawing motion given to this instrument by the right hand separated the tumor from the uterus, even at the fundus. In a few minutes I had succeeded in detaching and delivering a tumor which, by methods which I have heretofore adopted, would have taken, I think, at least a half-hour.

It will be observed that the surface of this instrument which comes in contact with the uterine wall is so convex, so much like the back of the bowl of a spoon, that no injury can be done by it; and that the teeth of the saw upon its edge are so arranged that it would be difficult, if not impossible, to cut into the uterus by even a determined effort to do so.

I now show the hard, fibrous tumor which was removed. It weighs $7\frac{1}{2}$ ounces, and measures, in its long diameter, four inches, and, in its short, three. It resembles, in shape and size, a large goose's egg, and is composed of the ordinary fibrous tissue which characterizes these myomata.

After the operation a tampon was introduced. Most of this was removed in twenty-four hours, and the remainder in forty-eight. The patient has since done perfectly well; both temperature and pulse have been very little elevated above the normal standard, and as three weeks have now elapsed, and she has for one week been sitting up and walking about her chamber, she may be regarded as out of danger."

Stated Meeting, March 6, 1877.

The President, DR. T. G. THOMAS, in the Chair.

Dr. Skene presented for Dr. FRANCIS H. STUART, of Brooklyn, a pair of

OBSTETRIC FORCEPS, WITH SHORT AND LONG HANDLES.

"The accompanying cut represents a pair of forceps devised for my own use, to meet the requirements and suit the conve-

nience of an ordinary obstetric practice. I am induced by the favorable opinion of those professional gentlemen who have seen them to present them to the professional public.

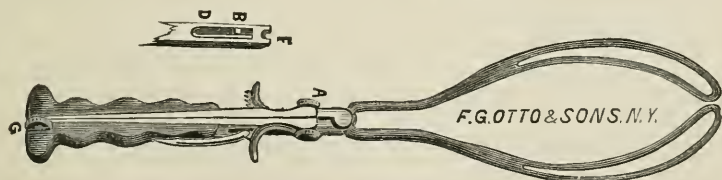
Usually a pair of short forceps is all that is needed to terminate a labor requiring, or which is advantageously facilitated by, forceps. They are easily carried, and are applied without giving alarm to the friends who see them. But cases constantly occur where long forceps are needed. Seldom the practitioner has them with him, and valuable and often important time is lost in sending for them.

The forceps about to be described combine the 'short' and 'long' forceps in one pair, which can always be carried without inconvenience, and can be applied with the least possible disturbance of the patient and trouble to the physician.

After trial of a number of others, I took Prof. Budd's forceps, with a single modification, viz., that the shanks of the blades are not quite $\frac{5}{8}$ of an inch apart. But any other forceps can be made in the manner proposed. Budd's forceps are essentially Simpson's blades and Elliott's lock and handles. The blades never pinch the parts, and the lock and handles combine advantages that make these forceps deservedly popular.

The short forceps figured are twelve inches long. The ratchet and catch at the end of the handles keep the forceps locked and in place. Sufficient traction-force can be used with these curved handles to terminate most labors after the head has fairly 'engaged.'

When the 'long forceps' are required, the catch may be left down and used, or it may be thrown back before the long handles are attached and then brought up beside the right handle, where it is entirely out of the way. After the 'short forceps' have been applied, the handles are easily adjusted. The thumbscrew (*A*) is to be loosened. Then the opening (*D*) in



the long handle is put over the curved portion of the short handle. A small, strong pin (*B*) on the inner surface of the opening in the long handle fits into a slot in the upper surface of the strait portion of the short handle. The distal end of the long handle has a counter-sunk opening (*F*) for receiving the thumb

screw (A). The thumb-screw is now tightened, and the forceps are ready for use. They are as *strong and efficient as any long forceps*. In length they measure $16\frac{1}{2}$ inches. A screw (G) at the end of the handles adjusts the amount of compression.

The advantages of these forceps may in brief be stated to be :

1. They are easily portable.
2. They combine both long and short forceps.
3. They are less expensive than two pairs of forceps, and are *equally* serviceable.
4. They are more easily applied than ordinary long forceps.
5. They are simple in construction.

I must express my obligation to Mr. F. G. Otto, who made the forceps for me."

DR. THOMAS related the history of

A CASE OF PLACENTA PREVIA TREATED BY BRINGING ON PREMATURE DELIVERY.

Mrs. R., a primipara, æt. 24, ceased to menstruate about the end of May. In the middle of October she had a slight hemorrhage, and this was repeated twice in November and twice in January, and again on the 16th of February. All these attacks came on early in the morning, and in each she lost about two ounces of blood. On Friday, Feb. 23, on rising to empty the bladder, she lost a large amount of blood, at least a quart, all in a few minutes. She lost a little on Saturday, and on Sunday lost a pint at each of two flowings. She continued to lose a little blood after this until Monday afternoon, when Dr. Thomas saw her, in consultation with Dr. Gilchrist. She was then very much exhausted from the prolonged and copious losses of blood; and in view of the facts that she had still two weeks to go before reaching the full period of gestation, that her child appeared to be still alive, and that it appeared highly improbable that either her strength, or that of her infant, would withstand other losses, Dr. Thomas urged an immediate resort to premature delivery. At this time the edge of the placenta could be distinctly felt by the finger inserted into the cervical canal, and it was looked upon as almost certain that other losses would occur. Dr. Gilchrist, gladly accepting the proposal of premature delivery, inserted the smallest of Barnes's dilators at eight o'clock that night. At half-past nine the second size was inserted; and at ten o'clock he sent for Dr. Thomas, declaring that the patient's condition was a very unsatisfactory one. When he met him at this time he found that, without creating hemorrhage, he had accomplished a good, though not complete, dilatation of the os. But the patient had become very nervous,

and was tossing her arms from side to side; the respiration was sighing, pulse small and rapid, and some loss of blood was occurring. The outlook for a lengthy labor was very bad; so, with Dr. Gilchrist's concurrence, he at once introduced the largest dilator, and having fully dilated the os externum, gently turned by the bimanual method, and delivered a fine boy. The child did perfectly well, and the mother slowly recovered. Her health, in the course of a month, was remarkably good when the great loss of blood which she sustained was taken into consideration.

Dr. Thomas said that he brought this case before the Society as additional evidence in favor of this method of treating these cases. He had now brought on premature labor in eleven cases of placenta previa, and had lost only two women, and neither of these from the placenta previa direct. One died of post-partum hemorrhage, coming on several hours after delivery, and the other died of puerperal fever.¹

Stated Meeting, March 20, 1877.

The First Vice-President, DR. SKENE, in the Chair.

DR. SKENE read the following paper on

THE CAUSE OF CONVULSIONS IN CHILDREN BORN OF UREMIC
MOTHERS.

"At the last meeting of this Society the statement was made that several cases had been recorded where children, born of uremic mothers, had suffered with convulsions after birth, and the belief advanced that the cause of such convulsions was uremia. A question was then raised as to authorities upon which that opinion was based.

The reply which I then made was as unsatisfactory to myself as it must have been to the Society; and my inability to satisfy the interrogator, and fully and freely meet the question, arose from my accepting, when studying this subject, what I supposed to be facts, without taking the trouble to remember the authorities from whom I obtained my information.

I desire to repeat the statement, and do now what I ought to have done then—give the reasons for my belief that uremia is produced in the *child in utero* by transmission from the mother,

¹ The bulk of the proceedings of the meetings of February 6th, 20th, and March 6th, has already been published in the April number, as the discussion on "The Influence of Medicines, particularly Narcotics, on the Fetus, when administered to the Mother during Pregnancy and Parturition."

and that uremia is an important factor in the etiology of convulsions of both.

To begin at the beginning, the following questions will be noticed, in order :

First. What the majority of authorities consider the *chief known cause of puerperal convulsions*.

Second. Whether the causes which produce convulsions in the mother *can be transmitted to the fetus in utero* ; and,

Third. If transmitted, do they produce the same effects in the fetus in utero (or in the child immediately after birth) as in the mother.

As the causes of puerperal convulsions in the mother we have the following :

Leishman (*Obstetrics*) says : 'The toxemia or blood-poisoning in eclampsia is commonly produced by uremia, viz., by a change of urea which is retained in the blood, or by the retention of excrementitious constituents of the urine.' Again : 'Under the head of eclampsia several pathologic conditions have hitherto been comprehended. Putting aside convulsions due to diseased conditions of the nervous centres, or irritation to peripheral nerves, etc., with these rare exceptions, puerperal eclampsia may be looked upon as essentially connected with uremic poisoning, and which is associated or dependent on an albuminous condition of the urine.'

Cazeaux says 'that eclamptic females are almost always affected with albuminuria. The presence of albumen in the puerperal woman always denotes a general alteration of the urinary secretion. This alteration first consists in a modification of the elements of the blood, which is soon complicated with a lesion of the kidneys, constituting its anatomical expression as albuminuria, and still later as eclampsia.'

Spiegelberg (*Archiv für Gynäk.*, 1870, also mentioned in Wagner's *General Pathology*) has recently examined a patient suffering from puerperal convulsions, in whose blood an excess of ammonia and urea was found ; and by experiments on dogs he maintains the accuracy of Frerichs's views. There are cases in which albumen appears only *after* the convulsions, and it therefore appears that the same causes which bring about the convulsions produce the albuminuria.

Braxton Hicks (*Obstet. Trans.*, vol. viii.) has reported a number of these cases and says that they are mainly explained in three ways :

First. That the convulsions are the cause of the nephritis.

Second. That the convulsions and the nephritis are produced by the same cause, *e. g.*, some detrimental ingredients circulat-

ing in the blood, irritating the cerebro-spinal and other organs at the same time.

Third. That the highly congested state of the venous system, induced by the spasm of the glottis in eclampsia, is able to produce kidney complications.

The opposition to the doctrine that uremia is the chief cause of puerperal convulsions is based upon certain facts, some of which may be named :

First. It is claimed that cases of convulsions have occurred, in which no albuminuria was observed before the occurrence of the attack.

Second. That in fatal cases of puerperal convulsions the kidneys have been found free from change of structure, and presenting no evidence of disease, except congestion, and that, in the great majority of cases of puerperal albuminuria, the organic changes found in the kidney of Bright's disease are here absent.

Third. That albuminuria has appeared after convulsions when no such condition existed before, and therefore the convulsions appeared to be the cause, and not the effect, of the uremia.

In answer to the *first* objection, I would say that the failure to detect albumen in the urine is no proof that the kidneys are performing their function normally, nor that uremia does not exist. Moreover, the number of cases where convulsions have occurred in patients where the kidneys performed their function perfectly are so few and ill-authenticated as to be of no great value when compared with the large number of cases where the reverse order of pathological conditions existed.

The reply to the *second* point is, that marked organic diseases or structural lesions of the kidneys are not necessary to produce uremia, any more than organic disease of the stomach is necessary to account for the vomiting of pregnancy.

Now, as to the *third* point, the fact that albumen appears in the urine in some cases *after* the convulsions, only reminds us of the fact that violent muscular exercise in man or woman, even when in perfect health, will give us the same result.

Feeling, then, that I am justified in believing that the convulsions of the mother are due to uremia, I will pass on to the consideration of the second main division of the subject, viz., whether the causes which produce convulsions in the mother can be transmitted to the fetus in utero.

I would remark, in commencing, that I take the ground that any morbid elements of the maternal blood are transmitted to the fetus in utero.

The fact is accepted that normal blood contains all the elements necessary to maintain the tissues of the maternal body, and, as identical tissues in the fetus are developed from the same source, it must be by transmission.

To deny this would be to presume that the fetus elaborates new tissues from elements unlike those used in the maternal body for a similar purpose. If this free communication between mother and fetus is admitted, it follows that any abnormal elements contained in the maternal blood would likewise be transmitted to the fetus.

To say that the nutrient elements of the maternal blood pass to the fetus, but that abnormal or foreign substances (such as opium, urea, and the virus of small-pox) are rejected, wholly or in part, would be granting a discriminating intelligence, on the part of the placenta, which would be difficult to prove and hard to believe.

I am convinced that the germs of disease, poisons, or medicines, which are taken up by the circulation of the mother are not only transmitted in part, but *freely* transmitted to the fetus. '*Such as I have, I give unto you,*' appears to hold good in the relations of mother and fetus.

In the way of giving evidence on this subject, I would recall some facts familiar to the members of the Society by quoting first from Watson's *Practice of Medicine*. Speaking of whooping-cough, he says: 'During the very early periods of infancy, *i. e.*, within the first two or three months, whooping-cough is said to be rare; I mentioned a case, however, before—and I have read of others—in which the disorder appeared to have been contracted before the patient was born. My bed-maker's daughter, in Cambridge, had a child ill with whooping-cough in the house with her during the latter weeks of another pregnancy, and the new-comer whooped the first week he came into the world.'

The same author, in his lectures on small-pox, stated that 'a woman near her full time took small-pox. The pustules were mature about the 10th or 11th of June. On the 18th she gave birth to a full-grown boy, upon whose face and body were many pustules, discrete, and nearly ripe. The child died the same night. It is a very curious fact that the fetus had caught the disorder, doubtless through the medium of the mother, although she, having had it previously, was unaffected by the contagion. Dr. Mead relates that "a certain woman, who had formerly had small-pox, and was now near her reckoning, attended her husband in this distemper. She went her full time, and was delivered of a dead child. It may be needless to add that she did not catch it on this occasion; but the dead body of

the infant was a horrid sight, being covered all over with pustules.”

To these I add two cases bearing on this point, which occurred in my own practice. A lady was confined while she was suffering from ague. On the third day after birth the child had a chill, followed by fever. These returned on the following day. The description given by the nurse and the mother led me to suspect the nature of the disease, and on the two following days I watched the child carefully, and found all the conditions of ague present except free perspiration following the fever (which did not occur).

A lady in the eighth month of pregnancy had gastro-intestinal catarrh, followed by jaundice, and violent hepatic colic, which lasted, off and on, for a number of days. Morphine was repeatedly given, hypodermically, sufficient to relieve pain. At the end of two weeks she was taken in labor and delivered of a dead child, which was as thoroughly jaundiced as herself.

Prof. Arnor recently saw a case where delirium, convulsions, and death followed in succession after malarial fever. Cholesteremia was given as the cause of the phenomena, and a post-mortem examination revealed acute fatty degeneration of the liver. This case is cited simply to show convulsions from acute blood-poisoning, closely allied to uremia.

Barker (on the *Puerperal Diseases*, p. 65) says, in speaking of the effects of albuminuria on gestation, parturition, and the puerperal state: ‘I shall first allude to its effects on gestation. The fact has been established by numerous observers, that abortion and premature labor are peculiarly liable to occur when the maternal system is suffering from albuminuria; and it can be readily conceived that the vitality of the ovum must be more or less impaired so long as it is nourished by blood impoverished by albuminuria, or poisoned by urea. In several instances, I have known this to be the apparent and probable cause of repeated abortions, or the premature delivery of a dead fetus.’ Here, then, is proof of a maternal blood-poison affecting the fetus, even to death.

Other cases might be quoted to prove the transmission of many other morbid materials from mother to fetus, but I pass to the *third* question, and main point in my remarks, viz., the etiology of convulsions in children born of uremic mothers.

When we inquire into the ordinary cause of convulsions in children, we find, prominent in the list, toxic agents in the circulation. Dr. J. Lewis Smith (in his work, *Diseases of Children*, p. 484) says: ‘Convulsions, coma, and death may occur from *uremic* poisoning, as in Bright’s disease.’ Meigs and

Pepper, in their work on the Diseases of Children, relate cases of convulsions caused by *uremia*.

Vogel, also, gives uremia as a cause of convulsions, coma, and death in children suffering from acute renal disease. To these might be added a long list of authors who state clearly that uremia causes convulsions in children.

This shows that most authors on diseases of children accept uremia as a cause of convulsions (in children). But we wish to show that uremia, *originating* in the mother, may cause convulsions in the fetus before or immediately after birth. Authorities on this point have been called for, and they are now presented.

Braun, in his work on Uremic Convulsions, states as follows: 'It is an unquestioned fact that the eclampsia of pregnant and parturient women exerts upon the fetus an influence dangerous to life. It is only as to the way of accounting for this fact that opinions are still divided. Kiwisch supposes that the stoppage of the circulation in the maternal vessels of the placenta during the fits is a part of the cause of the death of the fetus, but does not think that the fetus, at the same time, dies of eclampsia.'

'We cannot assent to this explanation, since many convulsive fits, originating in habitual epilepsy, and appearing repeatedly in the same day, never exercise any injurious influence on the life of the fetus, when albuminuria is altogether absent.'

'But, even after one or two eclamptic fits, it is sometimes found that the fetal motions have diminished in liveliness, that the fetal heart-sounds have ceased, and that the fetus is dead; and it is in exceptional cases only that the fetus remains alive after numerous paroxysms. If the mother dies during pregnancy, under uremic symptoms, it is almost always a dead child that is brought to light by abdominal section. If, after numerous uremic convulsive fits, the child is born still alive, a large quantity of urea is found in the blood taken from the umbilical cord; but if it is born dead, we can, immediately after the birth, demonstrate the presence of carbonate of ammonia in the fetal blood.'

Cazeaux in his great work says: 'If the prognosis is grave for the mother, it is equally so for the child, since it very frequently dies during the convulsions, *for the disorder created in the maternal circulation must, necessarily, affect that of the fetus.*'

In 1846, he saw a child die immediately, as it was being delivered, in which the extremities were contracting, and due, according to him, to convulsions like the mother's.

He also quotes a case of Schmitt, in a woman whose eclampsia

assumed a cataleptic type. At five o'clock the next day, the child presented the identical convulsive symptoms that the mother had shown, and died.

The following is from Moreland on Uremia. Churchill says: 'The life of the fetus is endangered so long as it is nourished by the uremic blood of the mother.'

Ramsbotham points to the toxic action on the blood as the probable cause of death in utero, and mentions a case from Spencer, where, the child being removed alive, by Cesarean section, from a mother just dead of convulsions, died itself in convulsions in less than one hour.

In 1861, Simpson found albumen in the urine of a sucking child, born of an eclamptic mother.

Dr. Duncan says that the uremia persisting in the mother, the milk is affected, as has been shown by several authors, and uremia follows in the child.

In Playfair's *Obstetrics* (just out) we get the following: 'There is good reason to believe that convulsions may attack the child in utero—of this several examples are mentioned by Cazeaux—or it may be subsequently attacked with convulsions, even when apparently healthy at birth.'

This, I trust, fully answers the question regarding the authority for my former statement, and leaves little room for doubt concerning the views of Braun and others on the etiology of convulsions in children born of uremic mothers.

An objection has been raised to the statement that the cause of these convulsions in the child is due to the presence of urea in the blood. This I can best give you by again quoting from Braun (pp. 36, 37), who gives Frerichs's views.

(a.) 'The phenomena of uremic intoxication are produced neither by urea nor any other ingredient of the urine, nor by the united excretory matters, as such, of this fluid; but they commonly arise from this circumstance, that the urea accumulated in the blood is transformed into carbonate of ammonia, under the influence of some peculiar ferment.'

(b.) 'Carbonate of ammonia is the baneful power which produces these disturbances of the functions of the nervous system.'

'For the production of uremic intoxication it is, therefore, necessary to have in the blood quantities of urea, and the presence of some ferment, by means of which the urea may be changed into carbonate of ammonia.'

Even if this is so, it does not, to any great extent, change the relations of uremia to convulsions. It might, perhaps, be more correct to say that, owing to arrested function of the kidneys, excrementitious materials necessarily accumulate in the blood

and give rise to convulsions. This is, however, about what we understand by uremic convulsions, and there is no necessity for changing the familiar nomenclature.

Regarding the cause of uremia in the fetus in utero, there is one more point which is purely speculative. It is, that urea is an excrementitious product of the fetus which is taken up through the placenta by the maternal circulation, and eliminated. Therefore, if the maternal blood contains an excess of urea, it fails to remove the same element from the fetal circulation.

But, granting that is true, the cause of uremia in the fetus is still due, indirectly to be sure, to the maternal uremia. And, if physiologists prove that urea passes from the fetal to the maternal circulation, that strengthens the claim that the reverse of this takes place, viz., that urea passes from the mother to the fetus, through the placenta.

In support of the theory that carbonate of ammonia is formed by the decomposition of urea, we have the testimony of Braun, Frerichs, Spiegelberg, and others. Against this view, we have the authority of Professor Hammond only.

In view of the facts here presented, we venture to say that the evidence tends to show that the convulsions of children born of uremic mothers is due to uremia. If this conclusion, to which we are led by investigating the various authorities, is wrong, then we must confess that the cause is unknown. But we will hold to that belief until other and stronger evidence demonstrates our error, or until some other doctrine, better substantiated, is found. As the matter now stands, the burden of proof rests with those who take the negative side of the question.

The facts here given bear a very important relation to the subject under discussion at the last three meetings of the Society. All the authors who write upon the subject agree that uremia in the mother is capable of destroying the child. If it can kill it surely can convulse, for the production of convulsions is one of the recognized effects of uremia.

Finally, if there is good ground for believing that such materials as urea, carbonate of ammonia, the virus of small-pox, etc., produce their characteristic effects on the fetus in utero, we may, with good show of reason, believe that medicines administered to the mother also affect the fetus. We are strongly sustained in this by recalling the evidence brought forward on this subject, at former meetings, by Drs. Thomas, Gillette, and Mundé.

Hence we may add that convulsions, coma, and death may be produced in the child by the administration of morphia to

the mother, previous to delivery. We might well apprehend such dangerous effects on the infant (when this drug is largely and suddenly introduced into the circulation of the mother), when we remember the well-established therapeutic fact, viz., the marked intolerance of opium, or any of its alkaloids, by the young subject.

There is another well-known law of therapeutics, which will help to explain the different effects obtained by the slow and by the rapid introduction into the circulation of such agents as opium: this law is that of the toleration of poisons, established by a slow administration, and a gradual increase in the dose. It is the difference between the acute and chronic effects of medicines.

This law may possibly throw some light upon the vexed question of the different effects of uremia in the acute and chronic diseases of the kidneys."

DR. JACOBI said that although he agreed with Dr. Skene's deductions, still the Doctor had not added any new facts; he had only given quotations from the opinions of others in support of his own views. He must prove that uremia will produce convulsions, and not the contrary. It is very common to find disease of the kidneys in the new-born. So that in any given case it is necessary to decide whether the convulsions are due to urea in the blood of the mother, or whether there is kidney disease in the child. The period immediately after birth is the time when nephritis most commonly occurs.

It may develop from one of three causes: first, from uric acid infarction, a generally admitted and understood cause. It may develop, also, from the sudden changes in the circulation which occurs at this time. This sudden change produces a number of localized congestions, which are very common, as, for instance, endometritis, catarrh of the middle ear, which is so common that its absence is considered by some as a proof of the child's not having been born alive. In the same way we may have a congestion in the kidneys, with effusion of serum, which may stop here, or go on to real inflammation. Again, the child may develop a nephritis from its mother in the same way that it may develop a deformity similar to the mother's—inheriting an abnormal in the same way in which it inherits a normal status.

We must prove, then, the presence or absence of nephritis in both mother and child in every case, and in some of the reported cases this has been done. We may have eclampsia and no albumen or kidney disease; again, we may have incipient nephritis and no albumen, and still no uremic convulsions. The diagnosis is difficult, for in at least one-half the new-born children

we will find a little albumen, due to the changes in the circulation already alluded to.

As to poisons being transmitted, they certainly are transmitted to the blood of the fetus, but are not all transmitted alike.

Fehling's experiments show this, for, while only a trace of iodide of potash was found after a woman had taken it for four days, yet salicylic acid appeared in forty minutes after it was given to the mother, in the urine of the new-born child. We should, therefore, be careful not to generalize too much from a few facts.

DR. PEASLEE remarked that the argument from the transmissibility of urea does not bear on the question of the transmissibility of drugs. Urea is normally in the fetal blood, so that it would be possible for the fetus to die of uremic eclampsia without the mother being affected at all.

Dr. Skene holds that the fetal blood is made up of the mother's blood, and consequently anything in one is found in the other. That is begging the question. In remarks at a previous meeting he (Dr. P.) had shown that there was a physiological necessity for the transmission only of those things which go to make up the tissues of the fetus. Other things may be produced in the fetal blood, so that if the child dies of eclampsia, it may be caused by something produced in its own blood. It is not fair to generalize that because one substance is absorbed, therefore others or all will be.

DR. SKENE replied that it was necessary very often to generalize in medicine, for we never find all the facts tending in one direction.

Although nephritis might be one cause of convulsions in the child, he did not believe it was the only way of accounting for such an occurrence. The fact stands that convulsions in children born of uremic mothers are more common than in other children, and this fact must be accounted for.

DR. PEASLEE presented a

SPECIMEN OF COAGULATED MUCUS PASSED BY A PATIENT WITH
CHRONIC ENDOCOLITIS.

The patient was a young and very nervous and hysterical girl. The specimen consisted of long, white, stringy masses, which seemed to be made up of fibrin and mucus. This substance was passed soon after the menstrual periods, and always after very considerable pain, which was referred to the epigastric region. Dr. Peaslee asked whether it was ever met with in other than women of a hysterical and nervous temperament, or in men. He had seen one other case which was cured.

DR. BLAKE said that he had seen two cases, in one of which it had lasted for fifteen years, the patient being now 50 years of age—not hysterical, but very dyspeptic and gouty. In the other case it had persisted for a long time. He had come to consider such cases as incurable.

DR. JACOBI said he had now seen six cases. In the first one he had mistaken the substance for diphtheritic membrane, but had examined a specimen and found no fibrin, only mucus. It was due to a catarrhal condition of the colon. One case which he had observed was in an old woman, and one in a boy 7 years old. So that although it might be more common in hysterical women, still it does occur in males and children.

DR. MANN remarked that he had seen one case where the membrane was so long and thin as to be mistaken for a tape-worm. It was in a hysterical woman, such as Dr. Peaslee describes. She had only two attacks, each one after prolonged constipation. She was now quite free from any such trouble, and had been for two years or more.

DR. CHAMBERLAIN reported a case in a man, a hypochondriac. It had persisted all one winter, but since then he had lost sight of the case.

DR. WALKER reported a case of

PELVIC PERITONITIS SIMULATING CANCER.

Mrs. M., æt. 70, had been well until last October, having ceased menstruating at 48. When first taken she complained of pain and tenderness in the pelvic region, and pain on passing water. An examination revealed the uterus and vagina atrophied, and the uterine fixed by inflammatory effusion on both sides and behind. The diagnosis of pelvic peritonitis was made, and the pain greatly relieved by a blister. She soon grew worse, and Dr. Thomas saw her in consultation. She was then losing flesh very fast; there was constant vomiting and inability to take food. She continued to fail, and died March 10th.

Autopsy.—The pelvis was filled with false membranes, surrounding collections of fluid, making so-called inflammatory cysts. These contained a dark, grumous fluid. The intestines were agglutinated with freshly effused fibrin. On the mesentery and intestine were small rounded white masses, which at first were supposed to be cancerous in their nature, and to be confirmatory of the previously made diagnosis of cancer. Dr. Hunter examined them by the microscope, and pronounced them to be fat, the so-called *appendices epiploicæ*.

Stated Meeting, April 2, 1877.

The President, DR. T. G. THOMAS, in the Chair.

AMENORRHEA FROM SLOUGHING AWAY OF THE UTERINE MUCOUS
MEMBRANE.

DR. ROBT. WATTS stated that he had observed a curious phenomenon in the case of inversion of the uterus which he had lately reported to the Society (see April number). Two months after the operation the patient had presented herself for examination, stating that she had not yet menstruated at all, and that her sexual appetite, which before the operation had been wanting, had developed of late, and had steadily increased, until now it was nearly intolerable. An examination showed the uterus in place, but small; the sound passing in only two inches.

DR. MANN said that the non-recurrence of the menstruation could be accounted for by the sloughing away and consequent absence of the lining membrane of the uterus. The investigations of Kundrat, Engelmann, and more lately those of Leopold, have shown that the mucous membrane is necessary for the performance of this function. In this way also could be explained certain cases of premature occurrence of the menopause following severe diseases. In such cases it will generally be found that menstruation occurred during the height of the disease, and the naturally slight exfoliation of the membrane was increased by the general degenerative tendencies of the disease, so that the whole membrane was lost, and on the recovery of the woman menstruation was impossible, although ovulation might go on and the sexual appetite remain.

DR. WARD believed that the decidua was thrown off at each period.

DR. MANN answered that this idea was based on the observations of Williams, of London. But all Williams's observations were made on women who had died of severe diseases, typhus and the like, and the loss of the membrane in these cases was just what would be expected under the circumstances. In Leopold's cases, all women killed by accident during menstruation and while in good health, the membrane was found to be nearly intact, and the menstrual flow to come from its surface.

DR. WATTS asked how ovulation would go on after the occurrence of the peritonitis. If the tubes were closed, what became of the ova, and why did not the rupture of the follicle induce inflammation?

DR. NOEGGERATH said that in this case the tubes were undoubtedly closed, so that no ova could pass through them.

But there was no reason why the discharge of an ovum should excite peritonitis. The ovum is so very minute that it is not likely to irritate. Peritonitis might be expected to follow ovulation only when the ovary was diseased, and a discharge of blood takes place with the escape of the ovum. He agreed that in this case the destruction of the uterine decidua was cause sufficient for the amenorrhœa. The impression is certainly gaining ground that the ovaries have very little to do with menstruation. Mayerhofer and others have collected a large number of cases where menstruation persisted after the removal of both ovaries. Dr. Watts thought the cessation of menstruation was due to the destruction of the ovaries by peritonitis. But we often see patients conceiving after recovery from peritonitis. Even if the superficial layers are destroyed, the function of the ovary may be restored, as the ova come from the deep layers towards the surface. This case would not go far as an argument in favor of the ovarian theory of menstruation.

DR. THOMAS mentioned that he had removed both ovaries in ten cases. Two died, the other eight report as follows :

1. E. W., three years after operation, reports "has never seen any symptoms of menstruation ;" is married.
2. E. B. P., two and a half years after operation, has never menstruated or had any symptoms of a disposition that way.
3. M. B. No menstruation.
4. I. E. B. Operation November 20, 1873. December, 1873, and January, 1874, had flow at usual time and lasting usual number of days. February and March, 1874, no flow ; April and May again regular flow ; since then no report.
5. C. G. No menstruation or symptoms of any.
6. Mrs. S. No menstruation.
7. Miss G., eleven weeks after operation. No menstruation or symptoms of any.
8. Operated in November last ; no menstruation to date.

DR. THOMAS said he had repeatedly diagnosed double ovarian tumor from the absence of menstruation, and the operation had shown the correctness of his opinion. He felt that the future would show that menstruation does depend on the function of the ovary.

DR. NOEGGERATH said that one case of menstruation persisting after the ovaries had been removed would prove the lack of dependence of menstruation on the ovaries, and many such cases had been collected.

DR. HUNTER reported a case of

SUPPURATION OF THE VULVO-VAGINAL GLAND.

There had been a free discharge from the gland for two years,

but no formation of abscess. A deep fistula had, however, been formed and extended down behind the rectum. This was opened up through the surrounding tissues and eventually did well.

DR. NOEGGERATH remarked that in some cases the discharge was constant, while in others it was intermittent. If an acute inflammation occurred the duct might be obliterated. The attack passing off, the adhesion thus formed would be absorbed, and the flow would be re-established. He mentioned a case similar to the one reported by Dr. Hunter. He also asked whether any such cases had been seen without a previous history of gonorrhœa.

DR. HUNTER said there was no history of any such trouble

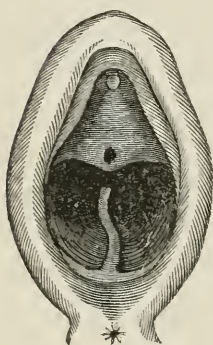


FIG. 1.

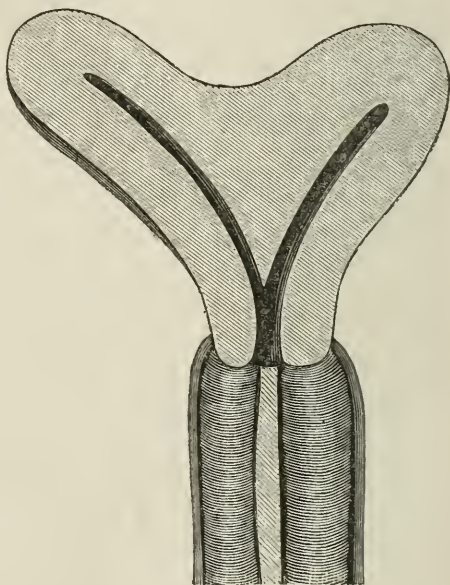


FIG. 2.

in his case, and Drs. WATTS, THOMAS, GILLETTE, and NICOLL all reported cases in which no gonorrhœa could be traced.

In Dr. Watts's case there was an irritating discharge from an epithelioma uteri.

DR. MANN reported a case of

UTERUS BICORNIS, WITH A PARTIAL VAGINAL SEPTUM.

(Figs. 1, 2, 3.) The patient, æt. 24, was married three years ago, and had a child one year after marriage. The labor

was difficult and instruments were used. She had always been well and had menstruated regularly up to the time of becoming pregnant. She came complaining of some slight uterine symptoms and an examination was made.

The uterus was found to be large, the cervix very broad, and

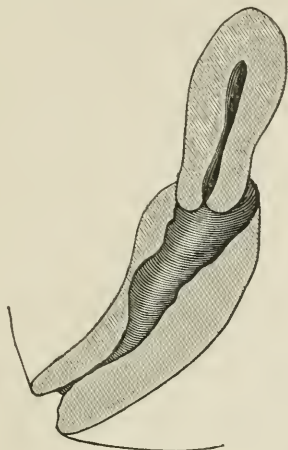


FIG. 3.

the os dilated. The sound could be passed to the right and to the left side. When two sounds were passed together their points could not be made to touch. The edge of the septum was a little distance within the os and very distinct.

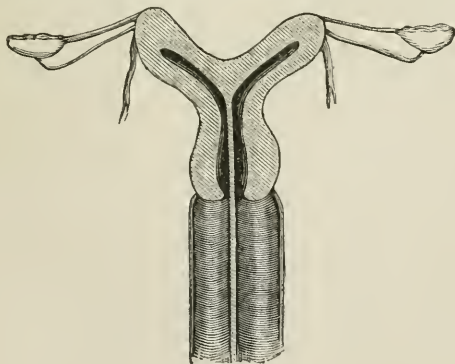


FIG. 4.

The septum in the vagina was not perfect, being broader near the vaginal outlet than it was above near the uterus, and was

attached in the median line of the vagina both posteriorly and anteriorly.

DR. MANN also showed the specimen of a

UTERUS BICOERNIS ET VAGINA SEPTA

taken from a nine-months' fetus (Fig. 4), which he had shown at a previous meeting. (The annexed drawing is natural size.)

DR. BYRNE said he had seen two cases similar to the one reported by Dr. Mann, and he had seen one which might easily have been mistaken for such a case; the sound could be passed both ways, but there was no septum, only a large uterine cavity and very lax, flabby, uterine walls.

DR. MUNDÉ asked for information concerning the literature of

NURSING SORE MOUTH.

DR. NOEGGERATH replied that this was an American disease, and very little had been written about it. It was generally considered as being due to a condition somewhat resembling scurvy. The monograph by Knapp comprised about all that had been published on the subject.

DR. THOMAS reported a

CASE OF SUPPOSED RUPTURE OF THE UTERUS WITH FATAL HEMORRHAGE INTO THE ABDOMINAL CAVITY.

He saw the case in consultation. The labor had been rapid and easy for a primipara. The attending physician waited half an hour for the placenta, and when it did not come, he introduced his hand and removed it. Dr. T. saw her about one hour after this. She was then complaining of being "so tired." Pulse seventy, and weak; nose cold and exhaustion great.

The uterus was hard and firmly contracted, and seemed to be high in the abdomen, and to the right side. He drew off about a quart of urine and removed a clot from the vagina; the cervix was normal and no hemorrhage. One peculiarity was the extreme tenderness of the uterus on pressure. She continued growing worse; became pulseless; the hands and feet were cold, and she had all the symptoms of severe hemorrhage. Stimulants were given freely. She rallied a little, but grew worse again, and died in three hours. There was no autopsy. In this case there was probably a superficial rupture of the uterus, with hemorrhage into the peritoneal cavity. The lack of an autopsy impairs the value of the case, but none was permitted.

Stated Meeting, Monday, April 17, 1877.

The President, DR. T. G. THOMAS, in the Chair.

DR. COLIN MACKENZIE read the following history of

A CASE OF PUERPERAL SEPTIC PYEMIA, WITH METASTATIC PANOPHTHALMIA.

"I was called on Friday, the 23d March, 1877, at 1 A.M., to attend Mrs. P., æt. 21, a primipara. On examination I found a l. o. a. presentation, the os slightly dilated, pains regular, and labor proceeding normally. The second stage of labor was entered about 7 A.M., which terminated with the birth of a child at 9½ A.M., placenta expelled by Credé's method of expression. Immediately on its removal the patient said, 'Doctor, I am faint and sick,' and continued to pass from one fainting attack into another, accompanied with nausea and vomiting, loss of pulse at the wrist, and quite a profuse flow, although the uterus was contracted to about the size of an Eydan cheese. I gave brandy by the mouth, and a large enema of brandy and milk with a tablespoonful of Squibb's fluid extract ergot. I considered the case as one of superficial rupture. At the time Dr. Noeggerath saw the patient with me, and found the heart's action decidedly feeble on auscultation, with an almost imperceptible pulse. In about one hour she had rallied somewhat, the pulse was felt to be growing stronger, and at the end of two hours she seemed to have recovered entirely from the attack. She did not entirely lose consciousness at any time. She continued to improve till Monday, when she complained of slight pain on pressure in the lower part of the left side of the pelvis. Nothing abnormal was found on vaginal examination. Her pain was relieved by quinia, so that by Tuesday evening it had entirely disappeared. On Wednesday she seemed quite well, with a pulse at 100, temp. 101° F., no tenderness on pressure, the lochia diminished, but odorless. The same treatment continued for the balance of the week, with the pulse ranging from 92-96, and temp. from 99-101° F. The bowels and bladder acting naturally. She slept and ate well. She did not nurse the child, and the secretion was checked by the application of belladonna. The lochia returned, small in quantity, but quite normal. On Thursday, April 5th, fourteen days after confinement, she had a severe attack of neuralgia of the right side of the face and head, which was relieved by quinine internally and chloroform externally. The pulse on that day was 106, temp. 102°. The following day she seemed quite well; no pain, pulse 92, temp 100°. On Saturday, the 7th, at about 4 A.M., she

was seized with excruciating pain in the left eyeball. I saw her about 11 A.M., at which time she could see perfectly, the only appearance, on examination, being congestion of the conjunctiva, produced, as I supposed, by the application of hot vinegar and chloroform, which had been used at the nurse's suggestion. I ordered cold applications and gave a hypodermic of morphine, considering it to be simply neuralgia. At 3 P.M., the pain not being relieved, I was sent for, but did not arrive till 5 P.M., when I found a protrusion of the eyeball, corneal opacity, and a total loss of sight; pulse 112, temp. 103°. Dr. T. R. Pooley was called in consultation, whose notes of the case I will now read:

'I saw Mrs. P., with Dr. Mackenzie, April 8th. There was swelling of the lids, slight serous chemosis, some frothy purulent discharge of a muco-purulent character. The cornea was diffusely opaque, and showed a circle of purulent infiltration just within the sclero-corneal margin, the centre of which was also opalescent, but permitted light to pass to such an extent that it could be ascertained that there was pus in the anterior chamber. The cornea was anæsthetic. Perception of light was good. No increase of tension. The diagnosis of metastatic irido-choroiditis was made and a hopeless prognosis given.'

The quinine was continued and morphia given hypodermically to relieve pain.

On Sunday, the 8th, about 7 P.M., Dr. Noeggerath saw her in consultation with me. Previous to his arrival I had made a thorough vaginal and uterine examination. There was no laceration of the os or perineum, no heat of vagina, no swelling or tenderness on pressure, no phlebitis discoverable. At Dr. N.'s visit the pulse was 120, the temp. 103.5°, and he, too, on careful exploration, could find nothing explanatory of her condition, excepting, as he thought, a deep-seated abscess of the vulvo-vaginal gland of the left side. The quinine was increased to five grains every two hours, combined with two grains of carbolic acid. Her temperature continued to rise until 10 P.M., when it had reached 104.5°, and Dr. Thomas saw her with me. He could find no satisfactory explanation of her condition, and did not agree with Dr. Noeggerath concerning the vulvo-vaginal gland. While he was present, the patient was taken with intense pain and stiffness of the left elbow-joint. He advised the cold bath for about ten minutes, and to be repeated every three hours in hopes to reduce her temperature. I superintended the first bath; her temp. fell to 102°, her pulse to 116. They were repeated regularly until six were taken, but after the third her

temp. and pulse rose, the former to 104.5° , the latter to 120, their only good effect, apparently, being relief of the pain in the elbow. At 5 P.M., on Monday, the 9th, when Dr. T. saw her again, her temp. was 105° , pulse 120. Her baths were stopped, and in addition to the five grains quinia every two hours, fifteen grains were given every sixth hour. She was quiet during that night and slept well, and when seen by Dr. T. and myself on Tuesday morning, the pulse was 104, temp. 103° . Cinchonism very marked. Quinia diminished to five grains every two hours. That night at 11, pulse had risen to 120, temp. 105° , which continued during Wednesday, with the additional trouble of nausea (which was relieved by iced champagne), sighing respirations and palpitations, and a complaining of great fatigue. Late that night the only changes observed being lips slightly cyanosed, and a dull leaden color under the eyes. Stimulants and quinia continued. On Thursday at 10 A.M. the pulse was 130-40, temp. 105.2° , respiration 48, and the tarso-metatarsal joint of the left great toe swollen, red, hot, and very tender. That night her respiration was more labored; her mind wandered at times, at other times perfectly clear. She had during the next day (Friday) five motions of the bowels, four diarrhoeal in character, but small in quantity. The eye was still discharging through the corneal slough. Whilst asleep she respired so rapidly and feebly, and her features assumed such a death-like pallor as to alarm the relatives and nurse. During Saturday her condition was about the same, with the addition of frequent and painful hiccough. Although her pulse was weaker, it had not increased in frequency. Her voice was strong, and she insisted on sitting up when her bowels or bladder were evacuated. She had three profuse operations from the bowels, whose odor was very offensive. Sunday, the 15th, at 10 A.M., her pulse fluctuated between 148-160, temp. 105.2° . She had two large operations from the bowels since my visit the night before. Her mind continued about the same. She complained of loss of memory. The respiration, temperature, and pulse remained the same till night, when her pulse was so rapid it could not be counted, and her temperature rose to 106.5° . On Monday she was the same, except the temperature, which had risen at my night visit to 107.5° , and a sensation of suffocation, with a slight laryngeal cough. She continued to sink, and died quite calmly at $11\frac{1}{2}$ P.M. No post-mortem could be obtained."

DR. THOMAS considered the pathology of this case to consist in an embolic process in the choroid, a resulting phlebitis, and consequent pyæmia. He remarked that he had seen two similar cases: one began with pain in the eye, and the anterior

chamber soon filled with pus. Collections of pus in the joints followed, and death soon took place. In the second case he saw the patient ten days after delivery in consultation. He found the elbow and wrist joints tumid, red, and tender. He made the diagnosis of rheumatism, the patient having given a history of several previous attacks. The result, however, showed it to be suppurative synovitis.

DR. MACKENZIE said that it had been suggested that the case had been one of acute endocarditis and consequent embolism. He had, however, been unable to find any symptoms of heart disease.

DR. NOEGGERATH remarked that the case had seemed to him to be one of septic pyemia. There was intense anemia from post-partum hemorrhage, and it is well known that anemia predisposes to septicemia. The origin of the trouble had probably been in the left vulvo-vaginal gland. Suppuration of this gland had taken place and the pus had infiltrated outside of the gland; absorption had taken place and there was a septic endometritis.

The panophthalmia he considered to be not so very uncommon an occurrence, and to be necessarily fatal. He had examined the heart carefully, and had found nothing. He mentioned having seen one case which had been published, where recovery took place after septic pyemia, which lasted two months, and where more than twenty abscesses were formed.

DR. HANKS related a case of puerperal septicemia with uremia. There were no local lesions discoverable. The trouble developed on the sixth day. The temperature was 103°, and the pulse 110-115. Chloral was given, and she improved, but again grew worse, temp. 107°, and died on the eleventh day.

DR. NOEGGERATH related a

CASE OF RECURRENT METRITIS, FOLLOWED BY NEURALGIA, SUCCESSFULLY TREATED BY SALICYLIC ACID.

Fourteen years ago a gentleman married who only six weeks before had recovered from a severe attack of gonorrhœa. The lady was a type of health and physical development. Two months after marriage she had an attack of pelvic peritonitis, and has never been well since. When first seen she had chronic metritis, right latero-version, and tender ovaries.

Two years after marriage she bore a child, and after it had an attack of acute perimetritis. This was followed by severe

hemicrania and so-called spinal irritation. Four years later she had another child and eight weeks after labor a very severe attack of pelvic peritonitis.

This year she became pregnant again, and two weeks after confinement she suffered from a slight attack of pelvic peritonitis and renewed attacks of neuralgia and hemicrania. The cervical and first dorsal vertebræ were very tender on pressure. All the lumbar and dorsal nerves were neuralgic, and she had severe pains in the arms, forearms, and legs. Various remedies were tried, but were of no avail. Yesterday she was given 20 grs. of salicylic acid and soda every two and every three hours alternately. She soon grew better and is now quite free from pain. The Doctor remarked that this was the first time he had given this drug in reflex neuralgias of ovarian origin, and asked the experience of the Society in the matter. The drug, he stated, produced symptoms similar to cinchonism.

MYXOMA OF THE MAMMA.

DR. PEASLEE presented a specimen of a tumor which he had removed from a female breast. When first seen the lady had a tumor which had been growing for three months, and was imbedded in the fat and did not touch the gland tissue proper. It was entirely removed, and in nine months she had another tumor four times as large and about four inches in diameter. The skin was slightly involved. This was followed in five months by a third tumor. This one seemed to implicate the gland tissue, and was about two inches in diameter. He dug it out without using the scalpel. The woman is still in perfect health and has no pain or inconvenience. This tumor was subsequently examined by the pathologist and pronounced to be a myxoma.

As illustrating the difficulty of diagnosing certain tumors of the breast, Dr. Peaslee mentioned a case of a lady who had a tumor in each breast, the larger one as large as an English walnut. They were hard and firm, and he considered them as fibroids. On removal they proved to be cysts, one holding half an ounce and the other two drachms of a honey-like substance.

DR. MUNDÉ reported a

CASE OF CYST OF THE VAGINA.

"Mrs. B. McD., 36 years of age, mother of eight children, consulted me March 15th, 1877. She said that her three last children had presented feet foremost, and been delivered dead by the physician, owing to some obstruction, and that she had come to

have it attended to in time, feeling herself again about two months pregnant. The last child was born seven months previously. Inspection revealed a tumor of the size of a small orange, projecting between the labia, which, on introducing the finger, was seen to spring from the anterior wall, and had the appearance of an ordinary cystocele. On endeavoring to replace the tumor, which readily fluctuated, it was found, however, that it could only be very slightly reduced, differing therein from a prolapse of the anterior vaginal wall, and became tense when the attempt was made forcibly. A sound introduced into the bladder conclusively showed that the tumor or cyst had no connection with that organ. The attachment of the cyst to the vaginal wall was about two and one-half inches in extent upward. The diagnosis of cyst of the anterior wall of the vagina was thus easily made. The patient said that during the non-pregnant condition, the tumor was scarcely apparent, but that as pregnancy advanced it gradually increased in size, until at term it completely obstructed the entrance to the canal, and prevented the birth of the child, rendering puncture of the cyst necessary before the latter could be extracted, an operation which, however, did not produce a cure. In order to avoid the repetition of this contingency, and secure permanent relief, I thought it best, in spite of her pregnancy, to operate, and chose the method of excision of the whole cyst, in preference to its injection with tr. iodine, which I feared would be more likely to induce acute inflammation and abortion than the simple union by first intention of a clean wound.

March 17th, the patient being under ether, and the cyst being pressed down into introitus vaginae, so as to render its surface tense, I made a longitudinal incision about two inches in length, and attempted to separate the cyst from its attachments and enucleate it, working with knife-handle, director, and scissors, as is customary in the extirpation of wens. But I soon found that the union between the cyst-wall and the submucous cellular tissue was so firm, and the latter so sparse in amount, as to render my purpose impracticable. While attempting to force the director a short distance between the cyst-wall and mucous membrane, the thin wall broke and the clear, glutinous contents of the cyst were discharged. A complete extirpation of the cyst was now possible only by slow and tedious dissection, and I therefore preferred to excise a portion of the anterior wall large enough to admit two fingers into the cyst, and to paint it out with Churchill's tincture of iodine, and apply a cotton tampon. Cold compresses were applied, and in the course of a few days, the cyst began to suppurate, and gradually to shrivel.

until in a couple of weeks it had entirely closed, without any interruption of the gestation having taken place. The patient has not presented herself since, therefore I conclude that the cyst has not refilled.

The number of cysts of the vagina reported in literature is by no means so great that the publication of a new case may be considered superfluous. Up to the appearance in 1871 (*Arch. für Gynäkologie*, II.) of a paper on this subject by Winckel, of Dresden, in which the first full account of the literature, etiology, pathology, and treatment of these growths was given, only fifty cases of true vaginal cyst had been reported, including four related by Winckel in that paper. Since then only two papers have appeared, one by Kaltenbach, of Freiburg (*Arch. f. Gyn.*, V., 1873), chiefly the report of a case, and the other by von Preuschen (*Centralbl.*, 40, 1874), who found glands in the vagina and attributed the cysts to the occlusion and dilatation of these glands. One case has also been reported (*Am. Jour. Obst.*, Vol. IX., 1876) by the late Dr. D. Brainerd Hunt of this city. Doubtless other cases have been observed and reported, but have escaped my notice in the superficial review I have been able to give of the matter.

T. Gaillard Thomas does not mention the disease at all in the latest edition of his book, and Schroeder devotes but two pages to its very imperfect description. In view of this scarcity of literature, and the comparative rarity of the affection, it may not seem inappropriate to refer briefly to the conclusions arrived at by Winckel. He found that the cysts generally occur singly (in 82 per cent.), more rarely two (12 per cent.), and still less frequently, three cysts (4 per cent.), are found at a time. Kiwisch found five in one case. As a rule, the cysts are located on the anterior (19 cases), or posterior (14) wall, more rarely laterally (5). On the anterior wall, the lower third and junction of middle and upper third are the favorite seats; on the posterior wall the lower and middle thirds. In two-thirds of the cases the cysts occurred in the lower half of the vagina. The size of the cysts varied from that of a pea or nut (25.5 per cent.) to that of a hen's egg, or pear, or larger (34.09 per cent.), the larger proportion being of medium size, pigeon's egg (40.4 per cent.). The contents of the cysts varied greatly, being reddish, brown, green, slimy, glutinous, albuminous, but generally of clear yellow color, and serous consistency. An analysis shows albumen, salts and water, epithelia, granulated cells, fat-globules, and in those with colored contents, pigment and blood corpuscles. There are four varieties of vaginal cysts, differing in origin and constitution of their envelopes.

1. Simple follicular cysts, superficially located in the mucous

membrane, with a thin envelope, containing only fibro-elastic tissue and lined by pavement epithelium. 2. Cysts caused by a dilatation of lobulated glands (found by Henle in exceptional instances in the upper portion of the vagina and the cervix), with thin walls, no endothelium, and always small in size. 3. Cysts, whose walls consist of the mucous membrane, and at least a portion of the fibro-muscular coat of the vagina; these cysts have no special capsule, but are found merely by a separation of the strata of the vaginal wall by an effusion, and occur chiefly in the lower third of the canal (of this class, I believe, was the cyst in my case, and it is therefore not surprising that its enucleation did not succeed). 4. Cysts in the perivaginal cellular tissue, with separate walls and varied contents (cheesy, dermoid), which grow down into the perivaginal space, and push the whole wall of that canal before them. Briefly, these four varieties may be divided into three groups: *a*, mucous cysts, arising from closed or open follicles; *b*, interstitial cysts, located in the submucous or fibro-muscular layer; and *c*, the subserous, situated above under the peritoneum, below between rectum and vagina. Of the fifty cases, the majority come under class *b*, interstitial, about 66 per cent. being found below the middle of the vaginal canal, a portion where even those authors who claim positively to have found glands in the vaginal mucosa, admit their absence. The etiology of these cysts varies. That of the follicular cyst is probably to be sought in chronic catarrh and inflammation of the vaginal mucous membrane, and in the physiological hyperemia occurring during pregnancy. The interstitial cysts probably arise in consequence of pressure, contusions and extravasations during parturition. Still, of the fifty cases collated only eight were parous women, and two were undoubted virgins, one being a new-born child. The rarity of the cysts in the lateral portions of the vagina certainly does not speak in favor of Veit's opinion, that they originate in a persistence of the Wolffian bodies; or possibly the lower ends of Müller's ducts may remain patent and occasionally be the starting-point of vaginal cysts. Strains and local injuries irrespective of childbirth are recorded as causative agents in several cases, and Verneuil believes in the occasional formation of bursæ mucosæ in the recto-vaginal septum.

The growth of the cysts is very slow, and the symptoms occasioned by them are referable chiefly to their size and protrusion; interfering with walking, coition, and micturition, and with delivery (as in my case); at times they are accompanied by a very offensive leucorrhœa. The diagnosis is simple, and only gross negligence could lead to a vaginal cyst being mistaken for a prolapsus uteri, a cystocele or a prolapsed ovarian cyst.

In none of the cases reported did spontaneous disappearance of one of the larger cysts occur; the smaller follicular cysts occasionally collapsed without treatment, but the larger ones generally returned after simple incision. To secure a certain cure it is usually advisable to excise a piece of the wall and cauterize the cavity with nitrate of silver or tincture iodine. In three cases out of fifty it is stated that the whole cyst was excised; in eleven, only a portion with cauterization; in six, simple incision; in five, puncture and injection of tincture iodine; all of these cases were cured. In four cases, simple puncture with a trocar was made, and the cysts refilled. In the other cases various plans were adopted with variable results. These single and isolated cysts of the vagina should not be confounded with a diffuse cystic degeneration of the vaginal mucosa during pregnancy only, first claimed to have been described by Winckel (l. c.), and termed by him *colpohyperplasia cystica*, which consists in the formation in the latter half of pregnancy of innumerable small cysts, as many as 15-20 to the square inch, of the size of millet seeds or peas, and confined to the middle and upper portion of the vagina. These cysts contain a clear serous fluid, and not unfrequently air. They appear to be partly retention cysts of follicles, but principally cavities formed by the agglutination of the numerous, during pregnancy physiologically hyperplastic, vaginal rugae, and the accumulation of secretion in these cavities. The frequently profuse leucorrhea during pregnancy seems to be the active agent in their production. In the three cases seen by W., they all disappeared after labor, being probably crushed and effaced during the passage of the child."¹

DR. WARD remarked that Dr. Thomas had been able to enucleate a similar cyst, but previously the cyst had been ruptured and suppuration had taken place.

¹ An additional paper by von Preuschen has appeared since the reporting of this case (Virchow's Archiv, LXX., 1,) in which he confirms his previous statements, adding that the vaginal glands resemble the sebaceous glands of the vulva; further, that a persistence of Gardner's ducts is frequent in other mammalia, and therefore not unlikely in the human female as an origin of vaginal cysts. It should be noted, however, that since P.'s first paper, no investigator has been able to find the glands in the vagina described by him, and that their presence, therefore, still demands confirmation.

TRANSACTIONS OF THE CINCINNATI OBSTETRICAL SOCIETY.

Stated Meeting, May 10, 1877.

The President, DR. J. J. QUINN, in the Chair.

DR. A. L. CARRICK read a paper on

RIGIDITY OF THE OS UTERI,

of which the following is an extract :

“Of all the unpleasant complications and obstructions the accoucheur meets, I know no other so perplexing as a rigid os, for it sometimes will resist all the recognized methods recommended for its relaxation, until your patience is almost worn out, and you see your poor suffering patient completely exhausted from her fruitless efforts at expulsion.

A case of this description occurred in my practice, not long since, of which I will give a brief record :

Mrs. B., aged twenty-nine years. Plethoric habit; short, thick-set frame; three years married. Sent for me to attend her in her first confinement. She had had severe pains for ten hours before sending for me. On examination I found her in the second stage of labor; vertex presenting; the os dilated just sufficient to enable me to determine the presentation. I found the waters had been gradually escaping since the first hour of labor; pains frequent and very lancinating. Having waited three hours, and finding the os not inclined to dilate, I prescribed an opiate, and directed the vagina to be syringed with a tepid decoction of poppy-heads. I then left for two hours, and on my return found there was no progress, the os being still rigid. I now made up my mind that I would have a tedious and troublesome case, so I sent for the assistance of my friend, Dr. Trush.

At this time she had been fully sixteen hours in labor, and suffering very much; pulse full and bounding; so, on consultation, we decided to bleed her. This was done to the extent of eighteen ounces. A half a grain of opium was also given, and one-sixth of a grain of tart. antim. every hour. Having given three such doses, the os still maintaining its rigid, undilatable condition, we used the extract of belladonna to the os, with

no perceptible effect. We then increased the dose of opium and tart. antim., and by *careful manipulation* at last succeeded in introducing the index and middle fingers by gently expanding the lips of the os in *every direction*. We at length succeeded in dilating to the extent of two inches in diameter. The woman was at this time over eighteen hours in labor, and in a very exhausted condition, so we decided to deliver her by forceps. We experienced considerable difficulty in introducing the second blade, but finally succeeded, and delivered her of a living child, weighing nine pounds. The mother made a good recovery.

Now, gentlemen, the case just reported is one on which there is very little information to be gleaned from the various works on obstetrics. It seems to be one of those cases where rigidity takes place from some abnormal condition of the uterus. You generally meet with such in women of plethoric habit, of rather advanced years, and in their first parturition; as if the muscular fibres of the uterus had become hardened and atrophied by long inactivity; and that after impregnation, and during the term of gestation, the same hardened and contracted condition still continued to be developed as the uterus increased in volume.

The treatment adopted in the above case seems to me to be the safest and the best, and to establish the doctrine that careful expansion with the pulp of the fingers will generally enable you to effect sufficient dilatation to permit the introduction of the blades of the forceps, and deliver the child.

In seven cases, under somewhat similar circumstances to the case reported, which I had charge of during the last few years, I had to use the forceps in every instance. Five out of the seven were delivered of living children. In all the mothers made favorable recovery, and no injury whatever resulted to the uterus in any of the cases. The application of the extract of belladonna to the lips and cervix failed to produce any perceptible softening or relaxation, while the toxicological effects on the mother were considerable; so much so that I have made up my mind never to use it again, as I consider it does more harm than good, and the sooner it becomes obsolete the better.

After taking a review of all the cases that have come under my observation, I feel emboldened to say that, as soon as you produce the necessary dilatation by the use of the relaxing remedies above recommended, the sooner you use the forceps the better, for if you wait too long you are sure to lose the child, with great danger to the mother also. I desire here to remark that I generally effect more benefit by the expansion

process during the *interval* of the pains; for if you try and force expansion during the tense condition of the os, while the pains are on, you run the risk of lacerating the parts, or by its reflex action still increase the rigidity you desire to overcome.

In studying the pathological history of this class of imperfections, I have come to the conclusion that in such cases the same rigidity that affects the os and neck more or less pervades the entire body of the uterus; so that when the pains of labor come on, instead of forcing the child downward in the natural course, the fundus loses its expulsive power, and the lateral walls of the uterus, by irregular contraction, grasp the fetus, and hold it *in situ*. To demonstrate this you will find that, if you place your finger on the os during the most violent bearing-down pain, you will find little or no pressure exerted thereon. Acting on this theory, it has been my practice to apply the forceps as soon as I can dilate the os sufficiently to enable me to do so. I find as the blades enter the uterine cavity they act as a relaxing agent on its walls.

Another point I desire to impress on you is, when rigidity continues for many hours, that after you overcome it and deliver the child, you generally experience great difficulty in removing the placenta; the same irregular contraction seems to continue, often assuming the hour-glass form. When such happens, no accoucheur of experience would hesitate a moment in introducing his hand, and by gentle manipulation induce dilatation sufficient to allow its extraction, thus proving the principle that if you succeed in overcoming the intense rigidity or muscular contraction even the slightest degree, the rest is comparatively easy.

I know many eminent obstetricians condemn the practice I advocate; many are strongly opposed to any mechanical interference whatsoever. Perhaps it is wise and prudent to give some caution on that head, for some practitioners are so rough and bungling in any manipulation they undertake that they generally do more harm than good; but in cases such as I have described, where there has been no primary cause for any contraction or hardening of the os or neck of the uterus, but where a general rigidity of its muscular fibres exist, you must rely on gentle expansion to effect the necessary dilatation to enable you to use the forceps as the surest and safest course for the safety of both mother and child, first having put your patient in as favorable a condition as possible by the relaxing agents already mentioned. I do not mean to say that you cannot succeed in some cases without using the forceps, but in the majority of cases that came under my observation their use was *imperatively demanded*.

You usually find, when this general rigidity exists, that the membranes are ruptured and waters discharged in the early stage of labor, thus giving another proof of the tight grasp the uterus has on the child.

When rigidity is confined to the os and neck, caused by some former organic disease of these parts, the treatment must necessarily be somewhat different. Should there be any hardened cicatrix of the os, the result of former ulceration or inflammation, incision of the cervix may be necessary. When to perform such an operation, and under what circumstances, the experienced obstetrician must be the judge."

DR. C. O. WRIGHT.—I would like to ask Dr. Carrick if he intended to state that attempts at dilatation should not be made during the time of the pain, and yet that he would use forceps during this period?

DR. CARRICK.—I should explain that I intended to say I would use dilating force only during the intervals between pains. In these cases the introduction of the blade of the forceps overcomes the rigidity of the uterine body.

DR. REAMY.—I must be pardoned for dissenting from the essayist in certain points of his treatment of the case reported in his paper. Bleeding and tartar emetic, although excellent as a general rule, in my judgment were hardly proper in the case taken as the text for his paper. However, the fact of her excellent recovery must be taken in partial justification of the treatment. In view of the demands to be made upon the system of the pregnant woman, we would not be justified in the use of the lancet and tartar emetic, unless there arise some special cause for their use, such as impending convulsions, or some other such justifying circumstance or condition. Certainly we would not be authorized to bleed for mere rigidity of the os. Repeated doses of chloral hydrate, in doses of about fifteen grains, as recommended by Playfair, would probably have been better; or opiates would in *this* case most likely have accomplished the relaxation of the os even better than chloral. Mechanical dilatation is very useful in such examples, and would, it seems to me, have been peculiarly appropriate in this instance. Of all dilating instruments I regard the fingers as the best, introducing first one, and dilating sufficiently to admit the second, when still further dilatation may gradually be effected. The finger is of all instruments the most intelligent that can be employed. In such cases, too, I have had good effects from warm water injections. As to belladonna, I formerly used it quite frequently, and was always disappointed in its use. I never knew it to relax the rigid os, but I have instead seen its poisonous effects upon both mother and child.

Before the discovery of chloral I was in the habit of using chloroform internally as a relaxing agent in such cases. I presume it acts upon the animal economy in very much the same way as chloral, which latter article is said to be slowly converted into chloroform upon its absorption into the circulation. Both these remedies are often of service, provided there be no organic change of tissue or special obstruction, in which case they are generally contraindicated.

In all cases where forceps are requisite and a rigid os exists, it is better not to stop at making just sufficient dilatation to admit the blade, but to make still further dilatation before using them.

PROF. M. B. WRIGHT, an honorary member of the Society, being present, was asked to take part in the discussion. He said: "I am too much indisposed to-night to speak, and indeed, on account of my ill health, it is not prudent for me to say a word in this discussion. Yet I will venture to make a few suggestions upon the subject under consideration, although they may not be very well arranged.

Indeed, it is a question with me whether, strictly speaking, such thing as a rigid os exists. Formerly I often had cases, which I then was strongly inclined to believe were those of rigid os, but later experience has led me to the belief that they are all dilatable by natural labor. I may illustrate my views by reference to a recent case to which I was summoned, in which there was what seemed to be a rigid os. By strong pressure only could my finger reach the cervix. By and by there were evidences of commencing labor, the principal sign being the presence of mucus. Then the condition of the os seemed to change, and there soon was a relaxation of all the tissues, and dilatation occurred as in ordinary cases.

In these cases, if the os is not in proper condition for dilatation, and if you attempt to *force* dilatation, you attempt what is in reality a premature delivery. In my earlier days I frequently resorted to the lancet, opium, and tartar emetic, either one or all. Latterly I have discarded the tartarized antimony and bloodletting, and now believe that I was formerly mistaken in the course I was in the habit of pursuing.

I think, concerning the case narrated by Dr. Carrick, that I would not have commenced at so early a period to make dilatation. As a rule, instruments should not be used until the first stage is thoroughly completed, and not then, unless for inertia or some other very good reason. In Dr. Carrick's case it seems that the second stage had indeed not fairly commenced when forceps were used. If the first stage had been entirely completed, and the second commenced, he would have been

justified in the employment of instruments, and indeed, no man is justified in using forceps with an undilated os."

Question by DR. QUINN.—Not even if the patient was in spasms?

DR. M. B. WRIGHT.—By instruments you would at such time increase the irritation already existing.

DR. TRUSIL.—As nearly as I can now recollect, the woman had been more than eighteen hours in labor—I think it amounted to more than twenty-four hours. Only a few months before seeing this case with Dr. Carrick I saw a similar case in which forceps were not used. The child was finally born dead, and the patient made a bad recovery. In old primipara the softening of the lips does not extend through the whole cervix. Most authors make three varieties of rigid os; especially does Cazeaux make this classification.

In Dr. Carrick's case the os did not yield much, only just sufficient to admit the forceps. The uterus was, during the whole labor, well contracted by pains. After the forceps had been applied the os was stretched across like a rigid band of rubber, and very slowly dilated. Indeed, I favored incision, which Dr. Carrick opposed. Of course, care was taken that the cervix was not torn off, but I had good reasons to fear that the child would be dead if not speedily delivered. I do not believe the uterus held the child fast by its abnormal contractions, as does the essayist, but I think that the resistance by the rigid os was simply too great to be overcome by the expulsive efforts.

Question by DR. M. B. WRIGHT.—Was not the cervix obliterated?

DR. TRUSH.—Yes, but I think the cervix held nearly the whole head.

Some have recommended hypodermic injection of the os. My experience as to manual attempts at dilatation are that they are not very successful.

DR. C. D. PALMER.—There are two classes of causes in which this trouble originates. In one they are organic, in the other functional, but the functional are the most frequent and occur most frequently in the old primipara. In the treatment of rigidity of the os I have used all the remedies usually recommended, except bloodletting. In Dr. Carrick's case it seems to me to have been justifiable. Tartar emetic is certainly often of service, and, indeed, natural vomiting at such times is excellent. At one time I used tincture of gelseminum, on physiological grounds, this drug being a relaxant. It is indeed difficult to estimate correctly the power of any particular medicine in rigidity of the os. But chloral seems of all to be the best

remedy, since it procures sleep, relieves excitement, and relaxes the muscular system.

I recollect having seen a case of the organic form with Dr. W., eight or nine years ago. One-half the cervix was soft, pliable, and moist; the other half was hard and rigid as sole-leather. She had had syphilis, and it was supposed that this rigid tissue was a part of its local effects. Barnes's dilators were finally used, but not very successfully, and eventually we had to cut the cervix along the parenchymatous tissue. This is, I believe, the only case in which I have ever been compelled to resort to incision for rigidity of the os. There is sometimes the objection urged that upon incision the cervix may become considerably lacerated. Incised wounds here heal quite readily, and do not usually give rise to much trouble.

I have used forceps in cases similar to that of Dr. Carrick's, and, indeed, there can, in my opinion, be no objection to their use when other measures have failed. I would not object to supplementing the force of the uterus by forceps, even though dilatation be not complete—aiding the *vis a tergo* uterine force by the *vis a fronte* power of the forceps.

DR. MILES.—I have had no great number of these cases, yet I remember having seen several primiparous patients in which opium was of great service. Great pain certainly shows the necessity for opium. I recollect three cases distinctly, in which labor was allowed to come on prematurely where it might have been prevented by proper remedies. Narcotics are often of great service, as they give nature more time to finish pregnancy, whereas, if their use is omitted, it is liable to terminate prematurely.

DR. REAMY.—I may further explain a little more fully what I have said in favor of manual dilatation. If the waters have passed off, and the necessity for dilatation is apparent, one, two, or three fingers may be used for the purpose, and their tactile sensibility gives an exact knowledge of just what we are doing—a knowledge which cannot be so definitely gained by using any other instrument. If the rigidity depends upon nervous irritability, then no dilatation should be attempted, but opium or chloral, or both, should be restored to. I agree fully with Dr. Miles that a full dose of opium under these conditions is specially indicated. I would give one grain every hour till the patient had obtained a good sleep. In a report which I made to the Ohio State Medical Society, ten years ago, I recommended chloroform per orem for dilatation as far preferable to that remedy by inhalation. Of course this was before chloral was known.

Barnes's dilators have been named in this connection, but I must confess that I could never use them very satisfactorily.

I must defend the use of the forceps in certain of these cases. When the os is dilated sufficiently to deliver instrumentally we are not justified in delaying too long. Beyond a certain point there is very great danger in delay, and every moment of delay then increases that danger.

DR. M. B. WRIGHT.—It seems to me that in the case of the essayist he used the forceps before the second stage of labor had begun. There were no moisture, mucus, nor signs of the second stage, and he was not authorized in using them before the mucous secretion indicative of the second stage. Had he waited longer these symptoms would have shown themselves.

DR. CARRICK.—Are there not cases in which this mucous secretion of which Dr. Wright speaks never comes on? I have seen cases in labor two days in which there were no evidences of this secretion about the os. Are you to allow the woman or the child to die while waiting for this mucus? I have seen cases in which this evidence of the second stage did not appear at all, and had I waited the child would have died.

DR. QUINN.—It is a question with me as to whether the difficulty in Dr. Carrick's case was one entirely of rigidity of the os. Both Drs. Trush and Carrick state that the uterus was strongly contracted, and the question arose in my mind whether, indeed, it was not a case of irritable labor requiring the use of an opiate, as suggested by Dr. Miles. I am satisfied that very many cases of supposed rigidity of the os are really of this character. My plan in irregular, inefficient uterine contractions, as well as in rigidity of the soft parts, is to give a hot alcoholic stimulant, and if that fails, I resort to opium. In rigid os I have found cases where I have felt justified in using forceps, although at the time of applying there was not dilatation of more than two inches. I once had a case of puerperal convulsions in consultation where the os was not dilated above two inches, in which, to my own surprise, I succeeded in introducing the forceps, which assisted very materially in still further dilatation. I delivered the child alive, and the patient recovered. The forceps of themselves excite the uterus to increased action. Many cases of the kind under consideration are caused by irregular contractions of the fundus. A hot punch will stop the pains usually, when they are irregular or immoderate, and if they are regular it will increase them.

DR. TRUSH.—I forgot to say that in this case to which Dr. Carrick called me the head was pressing upon the os, and it was dilating.

DR. CARRICK.—In reply to Dr. Reamy's remark that he did not think the case demanded bleeding, I would remind the gentleman of the peculiar condition of the case reported. Of

course I would not attempt to bleed had I a patient of a delicate, anemic, or strumous habit; but this woman was of full, plethoric habit, and strong, firm, muscular development. The pulse was full and bounding, and as each bearing-down pain came on the face assumed a dark, purple hue; at the same time the os remained hard and undilatable, all of which symptoms I claim urgently justified the treatment adopted.

In reply to Dr. M. B. Wright's criticism I would respectfully say that, unfortunately, there are cases in which this completion of the second stage of labor (as he describes it) will not take place without mechanical interference. Dr. Wright seems to labor under the impression that there is no such thing as a rigid os. I beg to inform the gentleman, "with all due deference to his vast experience," that I have had many *bona fide* cases under my care, and if I waited for this stage I would have waited in vain and have jeopardized valuable lives. When I first saw the case reported the woman was in every particular in the second stage of parturition; the membranes were ruptured and waters discharged; the neck of the uterus obliterated; the child's head was in the lower strait and pressing down in the vagina. All appearances indicated the second stage, with the exception of the os, which *remained hard and undilatable*. *It is this condition that constitutes a bona fide rigid os*, and imperatively demands mechanical interference for the safety of the child and mother.

Stated Meeting, June 14, 1877.

DR. C. D. PALMER read the following report of a case of

FIBROID TUMORS COMPLICATED BY TETANUS.

"A little more than one year ago, Mrs. D. consulted me on account of a severe uterine hemorrhage, from which she had been suffering for some four years. She was a widow, aged about 44, of marked nervous temperament, and looked very feeble and anemic.

My local examination revealed the following: great and irregular enlargement of the uterus; a small fibroid, size of hickory nut, within and attached to the cervical walls; thickened, hardened, and irregular cervical walls; canal of the cervix closed at the os internum to the introduction of the finger; anterior corporeal wall greatly thickened, pressing forward upon the bladder, and encroaching inwardly upon the uterine cavity; posterior wall thickened, but to smaller degree. Besides, two irregularly shaped nodulations, size of unhulled wal-

nnt, detected by palpation on the exterior of the organ. Mobility of the organ diminished; fundus midway between the brim of the pelvis and the umbilicus; sound passed $5\frac{1}{2}$ inches, curving around the anterior wall into an irregular cavity.

Very large and painful external hemorrhoids. No other disease manifest.

Diagnosis.—General fibroid disease of the uterus; sessile intra-cervical tumor; large interstitial infiltration into anterior corporeal wall; lesser infiltration along posterior and fundal walls; two extra-uterine growths, sessile.

Her hemorrhages, as stated, had continued some four years, were very profuse, and constant about three weeks of every four.

Treatment.—The intra-cervical growth was removed with the scissors; the external piles incised with knife. This last, very much to her relief.

Hypodermic medication with ergotine (dose grs. ijss.) was immediately commenced, to control the hemorrhages; and as soon as the cessation of latter permitted, thorough dilatation of the cervix was instituted. First, one No. 6 tangle-tent, then two, finally one dozen tents of assorted size, were packed within the canal to give the greatest amount of expansion possible. All of this dilatation was, of course, not accomplished uninterruptedly—in fact, it spread over a number of weeks. The thickened, hardened cervical walls around the os internum yielded very slowly and after considerable difficulty, then only to the extent of a silver half-dollar.

On withdrawal of these, the introduction of two fingers into the uterine cavity enabled me to distinctly map out the intramural growth of the anterior wall, as well as the other features above referred to. With a modified sound, the distal extremity of which is broad, flat, smooth, introduced to points beyond the reach of the fingers, I endeavored to discover any purely intra-uterine growth. I could not. Nothing more was perceptible than the bulging of the interstitial tumors growing from the surrounding walls.

I hoped by this plan of treatment to paralyze the circular fibres of the cervix, thereby favoring contraction of the longitudinal fibres of the corpus uteri, further stimulated to contraction by the aid of the ergot. The influence of such action would, in time, force out the intra-mural formation from its bed, and make the management thereof more amenable to surgical interference. At the expiration of some three months of treatment, consisting of the hypodermic medication, with ergotine, occasional dilatation, vaginal injections of warm water medicated with carbolic acid to prevent septicemia,

and nutritious diet, her local as well as general condition had very decidedly improved. The hemorrhages had gradually diminished in quantity and duration; the sound measurement was reduced to $4\frac{3}{4}$ inches. She was able to leave her bed, take abundant exercise, and had regained much of her former color and strength. So great was the improvement that treatment was suspended—patient leaving the city for three months. This improved state continued throughout the fall.

No influences were so potent in causing return of hemorrhage as excitement and anxiety. Unfortunately, my patient's mind was disturbed by an unusual amount of trouble. Directly associated with these causes, and seemingly the result of them, during last winter her hemorrhages returned. Physical exploration indicated an unchanged local condition. The uterine cavity gave the same measurement as last reported. She begged me to omit further use of hypodermic medication, because of pain. The ergotine was then administered by the mouth (grs. iv. ter die) or in suppository by the rectum. I also concluded to try the effect of section of cervix. This was performed in January last, by the bilateral method, to the vaginal junction, together with superficial incision along the anterior wall over the tumor. Not a single untoward symptom followed. The effect desired was the same as with dilatation with tents, though of a more permanent kind. Union took place through about one-half of the gap.

This operation was in due time followed by the weekly intra-uterine injection of tincture iodine, diluted one-half. No pain or any unpleasant symptom accompanied these procedures. My double canula was used. Material improvement again resulted, but it was only temporary. On the approach of spring she became seriously debilitated, and during the last menstrual flow was obliged to take to her bed, the first for a year. On Friday A.M., at my regular visit, after the last flow had ceased for several days, and while patient was about preparing to again sit up, she complained of some soreness of the throat and stiffness of the neck. This, in the absence of anything perceptible, was attributed to a cold. But early the next morning I was hastily sent for, when, on examination, I found a decided rigidity of the facial and cervical muscles—inability to open the mouth—a developed trismus. Full doses of bromide potassium, with chloral hydrate, were administered every two hours, without any improvement. On Saturday evening, in conjunction with the above, hypodermic medication with morphia, and afterwards morphia and atropia, was given. By Sunday A.M. a tetanus was fully developed. Opisthotonus marked. The smallest quantities of liquid food could not be swallowed. Hy-

podermic medication with morphia and atropia continued. Patient died Sunday P.M., in little more than forty-eight hours from the inception of attack, the mode of death being tetanoid asphyxia.

No post-mortem.

Commentary.—To me this has been a case of more than ordinary interest. In it there is much room for suggestion, as well as food for reflection.

From the very commencement of my attendance on Mrs. D., I had expected sooner or later to attempt the removal of the larger intramural growth. During my management of her case, till perhaps the last few weeks of her life, I had not deemed it either necessary or prudent to do so. Not necessary, for she was greatly relieved by the treatment instituted; not prudent, because the urgency of the case hardly justified an operation attended with the greatest danger, and which *per se*, by virtue of the nature of the case, was not sure to be followed by a positively beneficial result. The *enucleation* of this deep-seated interstitial fibroid, an operation which statistics prove to be a most serious one, would by no means have freed the uterus from all its sources of offence. The whole organ was more or less infiltrated. A thorough eradication meant a complete removal of the whole uterus.

I had hoped, by a faithful pursual of the ergotine treatment, together with free and permanent dilatation of the cervix, with incision over the tumor, etc., to force, in time, the larger tumor from its bed; in fine, to produce spontaneous enucleation, render it intra-uterine, and bring it within the field of a safer surgical interference.

The marked improvement in the patient's condition therefrom, although not permanent, it seems to me, fully justified a reasonable continuance of such measures. Such means, we know, can be depended upon as possessing a remedial power more than palliative. Not a few cases of interstitial fibroids have been made permanently better, nay, altogether relieved in this way. It was not till my patient was prostrated for the last time that I abandoned all hope of depending upon the above means, and seemed forced to the other alternative. Attempts at enucleation were about being attempted when the unforeseen complication of tetanus manifested itself.

The second inquiry, and that which perhaps interests us most now, is the relation, if any, the fatal tetanus bore to the fibroid tumors. Was the trismus, the tetanus, an idiopathic disease or a symptomatic affection? The answer, of course, is speculative; but, judging from recorded experiences scattered throughout obstetric literature, it is rational to presume that

the relation of the two diseases was direct. The uncommon association of the two diseases really argues nothing against this *possibility*.

Obstetricians are familiar with what is called puerperal tetanus. Simpson was among the first to draw our attention to this disease. He reports from his and other sources some 25 cases: one occurring in the unimpregnated state, 7 were after abortion, the remaining 16 after parturition. Other cases are reported scattered through the journals: Edinburgh Med. Journal, Feb., 1854; Simpson's Obstet. Works; Lond. Obstet. Transac., vol. xiii., p. 133; Brit. Obstet. Journal, vol. i., p. ii., p. 258; Ibid., vol. i., p. ii., p. 325; Ibid., vol. iii., p. ii., pp. 516-525; Ibid., Supplement, vol. iv., p. 33.

Tetanus following pelvic disease in the non-gravid condition is much less common than is the puerperal form.

Dr. Griffiths reports a case (Brit. Obstet. Journal, July, 1876) where tetanus followed in the course of a fibroid tumor of the uterus.

Dr. Brown, of Stoneham, Mass., a case after removal of polypus (Boston Gynecolog. Soc. Trans., vol. ii., p. 2).

Simpson's case was after the removal of a polypus (Obstet. Memoirs, vol. i., p. 570).

Dr. Thomas reports a case in his work, following the employment of a sponge-tent.

Dr. Chamberlain a case of hysterical tetanus (?) after the use of the curette (Amer. Jour. Obst., vol. iv., p. 720).

Spencer Wells lost two (Nos. 12 and 35) of his ovariectomy cases from tetanus.

Dr. Dawson, of New York, a case occurring on the ninth day after the ordinary operation for ruptured perineum (Amer. Jour. Obst., April, 1876).

Dr. Ribbell, in a communication to Chirurgical Society of Paris, relates a case following metrorrhagia, nine weeks after confinement, complicated with purpura hemorrhagica (Brit. Obstet. Journal, vol. iii., p. 358).

All of these non-puerperal cases were fatal, except that of Dr. Chamberlain (which he speaks of as hysterical) and that of Dr. Ribell. Of Simpson's 24 reported puerperal cases, but 2 recovered. The other 5 cases referred to were all fatal.

Nothing then is more certain than that *true tetanus*, either puerperal or non-puerperal, is an exceedingly fatal malady.

Again, a careful analysis of reported puerperal cases will throw no small light upon the etiology of this disease. Hemorrhage and septicemia were two most potent factors, and may be denominated as *the* predisposing and exciting causes. Puerperal tetanus, *itself uncommon*, arises from conditions equally

common after parturition or abortion, viz.: hemorrhage and septicemia. *Schroeder* refers to tetanus (puerperal) under the head of the infectious diseases.

An investigation of the circumstances under which the disease developed in the non-gravid state would lead to a similar conclusion. Fibroid tumor, polypoid tumor, are local diseases attended with more or less hemorrhage. The introduction of sponge-tents not unfrequently leads to septic inflammation. Septicemia covers no inconsiderable per centum of the mortality after ovariectomy.

Tetanus, then, which concerns the obstetrician and gynecologist, appears in its whole nature different from the ordinary traumatic form of the disease."

DR. J. J. QUINN (in the chair).—"I desire to ask Dr. Palmer at what point he made the hypodermic injections."

DR. PALMER.—"In the abdomen, and within a radius of three inches from the umbilicus. But they had not been used at all for a long time prior to the date at which symptoms of tetanus were developed, nor did abscess at any time follow their use."

DR. REAMY.—"Were any uterine explorations made about the time tetanus was developed?"

DR. PALMER replied—"No exploration of the uterine cavity was made during the last four weeks of the patient's life, except with the finger."

DR. REAMY.—"Prof. Palmer's case is full of interest and has been instructively presented. It seems to my mind that it is safe to infer the tetanic attack bore intimate relations to the uterine disease. Quite a number of cases are reported by authorities as having occurred in the puerperal state, and after pelvic operations. Usually, however, traumatic tetanus is supposed to be most prone to follow injuries of the extremities. I have seen 10 cases of traumatic tetanus, none of idiopathic. But I have, in 24 years' active experience, not seen a case associated either with parturition or follow operations upon the pelvic organs. It is notorious that tetanus is more prone to follow injuries considered slight, than those of a grave character. There is no doubt but that disintegration of tissue was going on in this uterine growth—disintegration caused by the local and constitutional treatment employed; under such conditions even a digital examination might cause a lesion. The richness of lymphatic supply could easily accommodate septic poisoning, which was most probably the origin of the tetanus, or it may have been induced immediately through nervous influence. I once saw a boy who had the prong of a hay-fork thrust only through the integument between his great and middle toes—the wound only "skin deep." Tetanus developed in 3 hours,

followed by death in 12 hours. Prof. Robinson, of Edinburgh, reports a case (quoted by Hammond)—a negro waiter cut his finger with a piece of broken china. He was immediately seized with tetanus and died in 15 minutes.

Neither the cause nor the pathology of tetanus is understood. It is pretty well agreed, however, that the immediate cause of the frightful muscular phenomena present is excessive polarity of the spinal cord. It is also tolerably well settled that this state of the cord may result from poison introduced into the blood autogenetically or heterogenetically, or, on the other hand, that reflex nervous influence of an order to induce a fatal attack may result from bruising distal nerves, without the intervention of any poison whatever. I doubt, however, the proof upon which the latter conclusion rests. But it is perhaps improper that I dwell upon these points, for they belong more to a discussion of tetanus in general than to this particular case. Yet I may be pardoned for brief reference to the morbid anatomy of tetanus, for although, as before remarked, its pathology is not well understood, yet what has been observed goes far, I think, to explain why all plans of treatment have been so unsatisfactory. Rokitsansky, Cushing, Wedl, Lockhart Clarke, and others are quoted by Hammond as having observed proliferation of connective tissue in the cord, increased redness of the cord, serous effusion with increased vascularity of membranes investing medulla spinalis, granular degenerative cells of cord, etc.

It is true that these changes are not uniform, and it has been asserted that when present they depend upon, rather than induce, the disease; but this I do not believe, and I think these changes show why the disease is so unamenable to treatment.

Since Dr. Palmer has generously asked us to discuss his treatment of this case, including the prior management of the uterine growths, I will make one comment founded upon my personal experience. Fibroid tumors, large or small, either with or without pedicle, when located in the lower segment of the uterus, are more dangerous to deal with, though easier to reach than when located higher up. The tent-dilatation for exploration is more likely to be followed by serious inflammation, and the same is true of removal of the growth, even by the wire rope.

This is also substantially the testimony of Dr. Atthill, of Dublin.

Again, while I am in the habit of incising the capsule of submucous tumors, in some cases enucleating, in others leaving it to the action of ergot, I never now make incision of the uterine cervix in such cases. What we seek after incision

of the capsule is compression, arrest of nutrition, expulsion; hence the ergot to increase uterine action, and also to contract the blood-vessels.

With the cervix divided, the muscular power of the uterus is thereby impaired; of this I am certain, and the apparent analogous case of the os dilated in labor for the final extrusion of the child makes no answer whatever to my proposition.

I am well aware the practice has high sanction; nevertheless, I am compelled to condemn it as bad in theory, and worse in practice."

DR. PALMER, in closing the discussion, said: "My object in reporting this case has been to bring out discussions on any of its features, more particularly the relation of the pelvic disease to the tetanus. This is the only case of the kind I have ever witnessed. On first consideration I was disposed to think similar cases very rare—almost unique, but further investigation proves the contrary. I have collated a number in the paper read to you this evening, and many more may be found on a thorough search.

Playfair thinks that puerperal tetanus is not uncommon among the dark-skinned women of India.

It does not seem probable that any of the operations upon the cervix, or explorations of the uterine cavity, had anything to do with the developments of the disease. All of these were unattended with any immediate symptoms whatever; moreover, they too far antedated the tetanus to hold any relation to it of cause to effect. The abundant use of ergot, also, was out of the question. This agent, while it stimulates and induces tetanic contractions of the involuntary, unstriated fibres, does not have such an influence over the voluntary muscles. I still think that the most potent predisposing cause was the hemorrhage. Under such influences, a nervous system already susceptible is made the more irritable under any exciting cause, however slight that may be. Here was an irritable constitution reduced by hemorrhage, perhaps affected in a measure by some septicemia, a condition very apt to be associated with hemorrhage from an absorption of decomposing blood-clots.

Tetanus here, as in the traumatic variety, is a functional disease of the nervous system, most violent in kind. It is an instance of a functional disease which kills. The post-mortem appearances which we find are really inadequate to explain this spasm of the voluntary muscles. It looks more rational to accept these, at least in most instances, as the secondary results of the tetanic action."

ABSTRACT OF THE TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY.

SECOND ANNUAL MEETING.

HELD IN THE CITY OF BOSTON, MAY 30TH, 31ST, AND JUNE 1ST, 1877.

(Concluded.)

THE INTRA-UTERINE TREATMENT OF FLEXIONS.

The paper by DR. ELY VAN DE WARKER, of Syracuse, N. Y., upon the above subject, was read by the Secretary, Dr. James R. Chadwick. Dr. Van de Warker began by saying that in a widely circulated text-book upon diseases of women, published by an American author, it was stated that the intra-uterine stem, in the treatment of flexions of the uterus, was rarely employed in New York, because, at a meeting of the Obstetrical Society of that city, no mention was made of the instrument as a means of treatment during the debate on that subject. The editor of a prominent medical periodical demurred to the publication of a very conservative article upon the employment of the stem in flexions, on the ground that those instruments were dangerous in the hands of the profession generally. It was the prevailing belief among general practitioners that those instruments were hazardous, and they were fortified in their belief by the writers of American text-books, without a single exception. It was his desire to show in the paper that those opinions did not represent the present state of either the knowledge or practice among gynecologists in the use of the intra-uterine stem in the treatment of these dislocations. The feeling was traditional, and not the result of accumulated experience. That the treatment should meet with opposition, that it should have its periods of abandonment and revival, was but the fate of every radical method of cure. In one respect the history of this treatment was anomalous—its popularity seemed to be sectional, and in America it had in a measure been crowded out by a surgical operation not unattended by danger, and one that was in no sense a cure of flexions of the uterus. The intra-uterine stem had a claim peculiarly its own, namely, that it occupied a debatable ground between danger and safety to the patient, and that, between the time of its first trial and con-

demnation and its present revival, new forms of instruments and new principles of application had been devised.

From that point the author went on to review the ground upon which the judgment of the French Academy was based in giving its decision upon the Valleix instrument in 1851. There was a man as well as an instrument on trial; the first, with regard to veracity, the second, with regard to its merits. An extensive review of the opinions held by various authors in different countries was also given. In conclusion, Dr. Van de Warker maintained that the conditions which governed the use of the instrument were such as governed a careful surgeon in the use of any other mechanical device in the treatment of flexion. It should not be used in recent cases of pelvic inflammation, or in acute or chronic peritonitis. Certain conditions of the uterus itself might exclude the therapeutic use of the instrument; such as extreme hyperæsthesia of the uterine walls and intolerance of its cavity. Such conditions demanded treatment before the use of the instrument or mechanical support of any kind. The organ in some instances, had such a powerful tendency to flexion, that the pressure of the wall, opposite the seat of flexion, upon the stem, was so great as to cause irritation. In those cases the stem could not be continuously worn, and must be removed and replaced until its pressure no longer caused pain. That difficulty was rarely encountered. In congenital flexions, which were often incurable, it was peculiarly indicated and gave prompt relief to symptoms. As to the instrument itself, it should be so short as not to touch the fundus of the uterus. It must have such a support, that all the movements of the uterus upon itself and upon the vagina and upon the ligaments were in no manner hindered. Consequently, that support must be located in the vagina and must be movable, both with reference to the vagina and to its connection with the stem. The stem must be as light as possible and non-corrosive, and of such size as not to press upon the limits of the external or internal os. There were difficulties in the way of selection and adjustment of the instrument, which would always interfere with its becoming popular with the general practitioner, but that objection did not hold good with regard to the expert. He believed it was shown to the satisfaction of all unprejudiced men, that the intra-uterine stem had a legitimate place in the present condition of gynecic surgery, and the author of the paper claimed for it no excessive value as a measure of cure, but did claim for it safety when used with the same judgment and skill that any form of mechanical support required in order to insure success.

At the close of the reading of the paper Dr. CHADWICK exhibited a form of pessary which involved no new principle, but was thought to be simpler in its general plan for support than some others.

THE PRESIDENT announced that discussion on Dr. Van de Warker's paper was next in order, and called upon

Dr. E. R. PEASLEE, of New York, who began with the statement that inasmuch as Dr. Van de Warker had not recommended any particular form of instrument in his paper, the general subject was under consideration. His first proposition was that he was entirely opposed to the use of intra-uterine pessaries, unless we had some particular form of instrument. He was opposed to the use of stem-pessaries in cases in which other means would answer, as, for instance, cases of retroflexion. He was not opposed to their use in the treatment of ante flexion under some particular circumstances. He was of the opinion that every case of retroflexion could be cured, if a curable case, by instruments which did not enter the uterus, and, if possible to avoid it, he would not use a stem-pessary. If confined in the discussion to ante flexion, he would start with the general proposition :

There was no possibility of putting an ante flexed uterus in place and keeping it in place, if by keeping it in place was meant keeping it *exactly* in place, except by the use of a stem-pessary. Then the question arose, was it necessary to keep it exactly in its normal position? If so, as long as the uterus was surrounded by the flexible yielding organs and tissues, it was impossible to keep it in exact position except by an intra-uterine instrument. But there was another question behind that; was it necessary, in order to remove all the symptoms produced by ante flexion, to place the uterus in an exact position? In most cases it was not. He did not pretend to place an ante flexed uterus in its normal position, and keep it there constantly, unless some particular symptom required it. For, as a general rule, in extreme ante flexion, amounting to perfect reduplication not infrequently, if we could reduce the flexion to the first degree, and keep it there, we shall have removed all the symptoms, and in forty-nine cases out of fifty it was not necessary to carry the reduction of the flexion any farther. If every symptom was removed, that was all that was required. That could be done generally by a very much simpler apparatus than the stem-pessary, and one perfectly unobjectionable. There were many exceptions to this. But if a woman, having no other symptom except the ante flexion, became anxious upon that subject, and it was ascertained by careful examination that there was simply an extreme degree of ante flexion and no other

cause, and it was believed that such antelexion was the cause of the sterility, in such cases, if there was no dysmenorrhea present, no symptom whatever, the stem-pessary might be resorted to at once, if properly applied, and the woman would, as a general rule, bear it well. There was no danger, probably, in making such an experiment. That was a general proposition. He would also say that, in general, if a woman had no other symptom except displacement, perhaps sterility depending upon that—or even if she had dysmenorrhea—but she was relieved from all congestion at every menstrual period, she might wear a stem-pessary with almost perfect safety. In such cases, then, he would use the stem-pessary if necessary, but he would, however, resort to another form of instrument before using it. As to the forms of the instrument: the stem, to be valuable, should not be fixed in the vagina at all—that is, fixed so that the uterus cannot have its natural movements—and the stem should be as light as possible.

The Doctor spoke of other instruments to be used in the treatment of antelexion, which should be used, if possible, before resorting to the stem, and which would never irritate the uterus.

DR. T. G. THOMAS, of New York, remarked that he had listened to Dr. Van de Warker's interesting paper with extreme pleasure, and that he was glad of the privilege of replying to it. While he would admit that the intra-uterine stem should have a place in gynecic medicine, he should be very sorry to have the paper go out from the Society uncontradicted. The perfect candor of the paper made him all the more anxious to say all that he could against it. It was to be recollected, however, that he was not entirely opposed to the use of the intra-uterine stem, for there were certain cases in which he still employed it. Dr. Thomas did not believe the use of the intra-uterine stem had been given up at times and then again revived as a matter of fashion, but he believed that it had fallen into disuse because there was an inherent danger attendant upon the use of any instrument which was left in the uterine cavity.

He was ready to admit, as every one must, that there was nothing more difficult to deal with than medical testimony. Some men, in the use of certain measures, reported uniformly good results, while others, in the use of the same measures, reported results which were most startling and unfavorable. One reason was, perhaps, that but few men were prone to publish their bad as well as their good results. It was much more agreeable to publish successful than unsuccessful cases. Moreover any man with ordinary mechanical ability, and an opportunity to use instruments extensively, as a matter of course,

acquired a much greater degree of skill in the use of those instruments than he who practised less. There were practitioners who advocated the termination of every case of natural labor by the use of the forceps, and would do so were they fortunate enough to get to the case sufficiently early. The results attending the use of the forceps would necessarily be most excellent in such a man's practice, provided he possessed ordinary skill in the use of the instrument, and his skill in their use would soon become wonderful. But let such teaching go forth to the profession; permit every young man to believe that he was to perform version or apply the forceps in every case of natural labor, and then follow the practice of every one of those physicians, and it was very patent what would be the results obtained. But there was another reason which was too frequently overlooked, and that was the fact that a mortality of one in one hundred cases of flexion of the uterus was greater than one in four cases of ovariotomy. Dr. Thomas then gave a brief sketch of the controversy in Paris, in 1853, when he followed Valleix in the wards of his hospital. He returned to New York, and in 1855 began the free use of the intra-uterine stem. He soon discontinued its use, however, because of the bad results obtained, and because of better results obtained by the use of other instruments. He gave it up for the reason that he learned that when a woman went away from his office wearing an intra-uterine stem, she went away in possession of an element of danger which might end in death. He was not able to agree with Dr. Peaslee in saying that if bad symptoms were developed, the woman could readily remove the stem. For the patient might be guarded ever so cautiously and seriously, and if she wished she would go to a ball with the foreign substance in her uterus, and no amount of caution could stop the exposure. No stem should be introduced into the uterus which would prevent its free motion in every direction, but with all that precaution, and working the mind of the patient up to the importance of being cautious, in a certain proportion of cases, he would not say a very large proportion, pelvic peritonitis would follow. It was admitted that gentlemen who devoted themselves to that special department of our science could use the stem in such a manner as to avoid many dangers, but he believed that if it came into general use it would be followed by disastrous results.

Dr. Thomas then made some remarks upon the general question of displacements of the uterus, and exhibited and described the manner of using several instruments which he had devised for the treatment of ante flexion.

In the treatment of congenital ante flexion a surgical pro-

cedure was required, but the use of a vaginal pessary with an elbow would, after the operation, render much assistance.

DR. NOEGGERATH, of New York, moved that the discussion be continued at the afternoon session. Carried.

The Society then adjourned, to meet at 3 P.M.

Second Day—Afternoon Session.

The Society was called to order at 3 P.M. by DR. BYFORD, Vice-President.

The subject for discussion at the close of the morning session was continued by

DR. NOEGGERATH, of New York, who remarked that he was an advocate of the use of the stem-pessary in the treatment of symptoms coincident with dislocation of the uterus. He had had the same experience of others, and had used the instrument in former years extensively, and had abandoned it. Then the era of surgical interference came, and he gave his adherence to that school. But he had returned to the use of the pessary. He did not, however, use the pessary for the treatment of the dislocation, but for the removal of certain symptoms coincident with such dislocation of the uterus. He employed the stem-pessary in cases of ante flexion, and in exceptional cases of retro flexion. His experience had been that it never cured ante flexion, but that it gave relief to one or two of the most prominent symptoms connected with that dislocation. During the last seven or eight years he had only employed pessaries made of lead, and having wings made of hard rubber. In an experience extending over fifteen years, and embracing its use in more than one hundred cases, he had had three accidents occur in its employment: 1, hematocele; 2, pelvic peritonitis; and 3, an attack of acute mania from the pain produced by the presence of the pessary, without inflammatory symptoms. He was of the opinion that death in one of two hundred cases in which the stem was used would be a large percentage, and claimed that any surgical operation employed for the relief of the same symptoms for which the pessary was used would be attended by as large, if not larger, percentage of deaths in its application. That fact went to prove that it was not the pessary which was the cause of the accident, but that there were certain conditions in which we might use the most innocent measures, and yet have their use followed by an attack of perimetritis, etc. He never employed the pessary in his office, but applied it at the house, and with the patient under the influence of chloroform. He employed it only in cases in which excessive dysmenorrhea was associated

with dislocation of the womb. It was not always the narrowness of the canal that caused the dysmenorrhea. Ante flexion in all degrees was always congenital. The intensity of the pain in the dysmenorrhea was not in direct ratio with the acuteness of the angle of flexion. Constriction of the os, externum as well as intenum, often was not followed by pain during menstruation. The so-called mechanical dysmenorrhea could sometimes be cured by means which added to the narrowness of the uterine canal. Pain in those cases very often disappeared spontaneously or by treatment without alteration of the shape or position of the uterus. Dysmenorrhea coincided so often with ante flexion of the uterus, because that position of the uterus was normal. No case of ante flexion of the uterus of the second or third degrees had been cured by surgical means. Operations performed upon the cervix, no matter by what means or method, often relieved dysmenorrhea, but never by correcting the position of the uterus. It was by an effect produced upon the ganglionic centres belonging to the sympathetic system.

DR. GOODELL, of Philadelphia, stated that he fully agreed with Dr. Thomas in reference to the hazard attending the use of intra-uterine pessaries, and always used them with great trepidation. But he was not willing to sweep them from our therapeutics. He was more inclined to agree with Dr. Peaslee upon that point, and there was scarcely a month that passed but what he saw a lady under treatment by the use of the stem-pessary. Some three years ago he wrote a series of articles, which were published in the *Medical and Surgical Reporter*, in which he spoke of the stem-pessary as a good instrument to watch. He had then used a Wright's intra-uterine pessary, and his patient had had a slight attack of perimetritis; the lady having first experienced the most extreme agony for several hours before she could be relieved. That experience rather alarmed him. Another case was also mentioned, in which analogous results had followed the use of the stem. It was because of the results following the use of the stem-pessary in those two cases that he wrote the articles referred to, in which he spoke of the instrument as one better to watch than one actually productive of any good. But since that time he had changed his opinion somewhat regarding the treatment of flexions. There were certain cases of flexions which could not be treated otherwise, and if a proper pessary was employed, no serious symptoms followed its use. In the first place he ordinarily employed what was known as Chambers' pessary, which was an elastic instrument made of rubber, and as the rubber became worn the spring became less strong, and to that he attached a string, so that the instrument could at any time be removed by the

patient if it gave rise to pain. In the second place he made an accurate measurement of the cavity of the uterus, and took good care to have the pessary half an inch shorter than the length of the canal. Used in that manner he had found that his patients could bear the intra-uterine stem. Reference was made to two cases, at that time under observation, who had been wearing the intra-uterine stem for several months without inconvenience, so innocuous was the instrument. He did not wish to be understood as saying that the instrument was innocuous by any manner of means, but so innocuous was it where a feeble spring was used, and in the manner mentioned, that he did not hesitate to employ it in certain cases. Dr. Goodell continued his remarks at some length.

DR. ALBERT H. SMITH, of Philadelphia, remarked that, in his experience, anteversion of the uterus was seldom found, *per se*, as a pathological condition. He did not remember scarcely of ever having examined a patient in whom he found anteversion alone to be the cause of the symptoms and suffering. In cases in which he found anteversion present, he found it associated with some conditions which had affected the integrity of the anterior wall of the uterus; such as the development of a fibroid, inflammatory condition producing hyperplasia, etc., etc. Having some such condition present, he had rarely found a case of anteversion in which a pessary would be tolerated until that condition had been removed. The anterior wall of the uterus would not bear the pressure of the instrument. Again, how often we examined patients, and found the body of the uterus resting directly against the pubis, and yet no condition present which could be referred justly to that supposed abnormal position. Anteversion was the normal position of the uterus.

In retroversion we had to deal with a condition which the pessary was specially adapted to relieve. When we remembered that the main support of the uterus was the utero-sacral ligaments, which formerly were supposed to draw the uterus backward, but which, we had come to know, acted by drawing the uterus upward, we could understand how it was that prolapsus and retroflexion took place where those ligaments from any cause lost their tonicity. When, therefore, in such conditions, the pessary was used, it was employed as a substitute for those ligaments; the instrument supplemented their normal action.

With regard to the stem-pessary, Dr. Smith could not endorse the encomiums given it by Dr. Van de Warker.

With regard to congenital displacements, he had never seen a flexion which could not be traced towards an appreciable cause. He thought the so-called congenital flexions were due

to appreciable causes, which operated to produce displacement and subsequently flexions.

DR. W. L. ATLEE, of Philadelphia, remarked that he was sorry he had been called upon. He had no experience with pessaries, at least in their introduction, but he had had a very large experience in their removal. He did not think there was a day, when at home and in his office, that he did not have the privilege of taking out a pessary. He had removed pessaries of all forms and sizes, and pessaries which had been introduced by the most distinguished men of the profession. The fact that so many of these instruments had been devised was sufficient argument that the pessary was injurious, and that the principles were not well understood in its application. If the uterus was in a state of health he would say that no unpleasant symptoms would arise from it; if the pelvis was perfectly healthy it was impossible that bad symptoms should arise. If, therefore, we had disease of the uterus or disease of the pelvis, and treatment was applied to that disease, and it was relieved, he for one would permit the uterus to do as it pleased. It was well known that, in the course of twenty-four hours, the little organ lying loose in the pelvic cavity had its position changed many times by mere change in the position of the body. We knew also that the position of the uterus was changed by the act of coughing, sneezing, by the action of the bowels, and the action of the bladder. It was a natural result, and yet the change in position produced no disastrous consequences. If, then, we had a uterus free from disease, a pelvis free from disease, and both were in a perfect physiological condition, and free from any taint or trouble, where was the indication for using a pessary? Hence, he said, in view of long and extensive experience, and in view of results which satisfied him, his experience had been only in the removal of the pessary and not in its introduction.

DR. WILSON, of Baltimore, remarked that he endorsed the opinions of Dr. Atlee, and that there was no requirement for any instrument where all the pelvic organs were healthy. He had had but very little success in the treatment of displacements of the uterus except retroversion. He had never seen a pessary which in his experience had benefited antelexion of the uterus. Twelve years ago he used the stem-pessary—all the various kinds which were then in use—and he was led not only to discard them all, but he had not employed them since. According to his experience, when they had been introduced into the uterus, such constitutional disturbance and irritation followed that he never expected to use another.

Dr. Wilson expressed the opinion that there was no such

condition as congenital ante flexion of the uterus. He felt quite confident that the ante flexion was produced about the time of puberty, and regarded constipation as one of the most common of all of the causes of that form of displacement. Another cause was wearing so much weight of clothes suspended from the hips, and still others were mentioned. With reference to dysmenorrhea, he was satisfied that there were very many causes beside those which were mechanical. The Doctor believed that in a large proportion of cases of dysmenorrhea, the cause, particularly in ante flexion, consisted in obstruction at the internal os, and of all the means which he had adopted in the treatment of such cases, division of the cervix backward from the internal to the external os had been most successful. The *rationale* of such treatment he believed to consist in the division of the circular fibres so as to permit the longitudinal fibres to exercise their full force. At all events, he had, by that means, been more successful in affording relief in cases of ante flexion accompanied by dysmenorrhea than by any other.

DR. BYFORD, of Chicago, remarked that there was one feature underlying the internal treatment of flexions, and that was to cure the patient instead of straightening the uterus. All of the speakers had recognized the fact that the pathological conditions accompanying flexions were the conditions to be removed; but if the pathological conditions did not depend upon deformity of the uterus, of course the removal of them would not cure the patient. The only question was whether those pathological conditions did depend upon the changes in the uterus. He had no doubt in his own mind but that the pathological conditions were primary in the production of these flexions, and he also had no doubt that flexions were aggravated by the pathological condition. Consequently we had an instance in which it was not only necessary to remove the primary pathological condition, but also to remove the effects in order to completely cure the case. The cure of flexion by the internal use of instruments was not effected by, mechanically straightening the uterus and keeping it straight, but cure came by the removal of the pathological condition upon which the flexion primarily depended. If the pathological condition was not removed, removal of the flexion was of no use. In the course of his practice he had been in the habit of removing the symptom depending on flexion by a method which was not generally known in the United States, and which had been so satisfactory to him that, laying aside all other methods, he would present it to the Society. It consisted in the use of the elm bougie or tent. These tents

were made of the simple slippery elm found in the shops, cut into proper size and length, and having a thread attached to one end for the purpose of ready removal. They might look rather rough and stiff, but soaked for a few minutes in water they became very flexible. In that condition they could be introduced into the most flexed uteruses without difficulty. The difficulty attending the introduction of rigid instruments has been urged as one of the objections to their use; it had deterred him from the use of the stem-pessaries in common use. But these slippery elm tents, when grasped by dressing forceps, no matter whether the canal was crooked or straight, could be passed into all the curves without resistance and without producing any special amount of irritation. The manner in which they were used was to introduce them entirely beyond the flexion and permit them to remain there for a varying length of time. He allowed them to remain in the uteruses as long as they did not produce pain, usually from three to twelve hours, but if pain was produced, the thread attached at once placed the tent under the control of the patient, and it should be immediately removed. One, three, or five tents might be required, but with the introduction of each one the same instructions were to be given—namely, to remove it the moment any pain was produced. As far as he could judge where flexion produced dysmenorrhea, the introduction of one of these tents four or five times during the month, and one about two days before the time for the occurrence of the menstrual period, about 80 per cent. of the cases would be improved from the commencement of the use of the elm tent, and would continue to improve, and if they were regularly used for perhaps two or three months, or it might be more, would be entirely cured. The *modus operandi* of this little instrument was very different from that of the sponge tent, or from forcible dilatation or from dilatation by the sea-tangle tent. He did not believe that it produced as good effect by mechanically dilating the neck of the uterus. It increased the size of the cervical canal somewhat, but that was not of much importance in considering the advantages attending its use. It produced an influence upon the vascular and nervous condition of the mucous membrane of the cervix and of whatever tissues it came in contact with, thus assisting in the removal of the pathological condition.

DR. A. J. C. SKENE, of Brooklyn, remarked that exactly what the young physician was to do regarding the use of pessaries, while such a difference of opinion existed amongst the older members of the profession, was somewhat puzzling.

He felt satisfied that the intra-uterine "stem" having been

fully tried, and sanctioned by such gentlemen as Simpson and Valleix, would not have fallen, as it had, into disuse, unless it had failed to meet expectations. That, in itself, was a strong indication that the instrument was, in many respects, unsatisfactory. Further, the very fact that after the instrument had been fairly brought to the notice of the profession, it was subsequently almost lost sight of, was proof that others found that method of treating flexion objectionable.

Regarding the paper of Dr. Van de Warker, he thought that all the good points were put in a very strong light, while the well-known objections were entirely lost sight of.

One question which Dr. Peaslee had raised had struck him as rather interesting, and that was, if there were no dysmenorrhea, no hyperemia, and no pelvic symptoms whatever, beyond simple sterility, then the intra-uterine "stem" might be used. It seemed to Dr. Skene that that was just the condition that contraindicated the use of it or any other pessary. Everything else said by Dr. Peaslee on that subject was fully endorsed by Dr. Skene, if taken in connection with the importance of removing all other accompanying conditions.

He felt satisfied that the principles underlying Dr. Thomas's method of treating this class of cases were perfectly correct, and was of the opinion that anteflexions apparently congenital were very common, and were generally due to arrest of secondary development, at puberty. The method of treating flexion detailed by Dr. Thomas was interesting and not unfamiliar, in part at least.

One difficulty which Dr. Skene had had in following that method of treatment was the fact that the anterior vaginal wall was often so short and unyielding that a pessary would not raise it up far enough to support the fundus and thereby straighten the uterus.

Regarding the statement made by Dr. Noeggerath, that the dysmenorrhea of flexion was not mechanical, he begged leave to take exception thereto, for he could not see from any method of reasoning why the patient should be benefited by the use of the intra-uterine pessary, if this was the case.

With reference to the use of the intra-uterine "stem" the Doctor was prepared to speak of its dangerous qualities, having seen very bad results follow its careful use.

He believed, however, that no one had a right to condemn anything until he had fairly tested it, and he thought that he might not have given the "stem"-pessary a fair trial.

This much he could say, however: 1st, that he had found it exceedingly difficult to keep in place, owing to the disposition of the uterus to contract upon its contents; 2d, that when se-

cured in position it nearly always gave rise to marked irritation; and, 3d, that often, after it had been worn for a long time, flexion remained the same, or returned after the stem had been removed.

DR. GARRIGUES, of Brooklyn, remarked that in Denmark, as far as he knew, the intra-uterine pessary was not used at all. Professor Howitz, the most prominent gynecologist in the Scandinavian countries (with whom Dr. G. studied), did not use it, nor did Dr. Garrigues use it in his own practice. This branch of the medical science had been introduced so recently into the country that we had to be very careful to avoid untoward results of our treatment. But some years ago he made a voyage in order to see how gynecologists worked in other places. In Berlin he saw the late Dr. Martin employ an intra-uterine stem of bone, with a small ball for a support in the vagina, daily, and Dr. M. pretended to have used them in hundreds of cases without any bad results. In Halle he spoke with Olshausen about it, and was told that he used such pessaries and thought we could not do without them, but admitted that they were dangerous. He had treated eighty-eight cases, and had seven cases of inflammation in the pelvis. As to the statement of Martin, whose assistant he had been, he thought his memory had failed him in making it. In London Dr. G. saw Alfred Meadows introduce one of his own glass stem-pessaries. The next morning the patient had cellulitis. He happened to be present when Squarey presented his intra-uterine stem in the Obstetrical Society of London, and as it was a modification of a similar instrument invented by Greenhalgh several of the leading members could give their own experience with regard to it. They spoke all in favor of it. They said it did not cure the flexion, but that it relieved the dysmenorrhea, and that this was probably due to prevention of spasm at the internal os. But Squarey's pessary was entirely different from those he had hitherto spoken of. Whilst they were stiff, Squarey's was made of the most flexible rubber, and would be tolerated by a uterus if it tolerated anything in its cavity.

DR. PEASLEE, of New York, referred to a point in pathology which he regarded of the utmost importance. It had been suggested that the utero-sacral ligaments were involved in the production of retroflexion; he did not think that was correct. The utero-sacral ligaments did not pull upon the body of the uterus at all so as to produce true retroflexion; they might assist in the production of retroversion, but they had nothing to do with the production of true retroflexion. The only principle upon which an instrument could be properly applied in the treatment of cases of retroflexion was upon the principle of a

prop, and that prop to go above the point of flexion, or it was of no use whatever. If Dr. Smith's instrument was employed, or a circular pessary was used, it must go up beyond the point of flexion in order to be of any service. He regarded Dr. Smith's instrument as better than his own, but the woman could not manage Dr. S.'s instrument, whereas Dr. P.'s instrument was perfectly under her control. His own instrument was adapted to cases in which the ante flexion was in the first degree, while Dr. Smith's instrument was better adapted to the treatment of cases in the second and third degrees. With regard to the use of pessaries, he removed a great many of them, but he put them all back again.

The President introduced DR. J. B. S. JACKSON, of Boston, who remarked with regard to congenital flexion of the uterus, that although he had examined a great many specimens, both during infantile life and in adults, he had never seen a case of that kind. The uterus in the new-born child consisted entirely of cervix, and continued so for a considerable time. It was not until the sixth or seventh year of age that the body of the organ began to be developed, and even at the eighth or ninth year the body did not amount to much, according to his observation. Dr. Jackson exhibited a uterus in which the *arbor vitæ* extended to the uppermost extremity of the organ. He had understood one gentleman to say that in congenital flexion of the uterus the flexion took place at the junction of the body with the cervix, and he was surprised to hear that statement, when it was his belief that there was no body.

DR. PEASLEE.—Was there ever an instance of flexion where there was no body?

DR. SMITH.—In other words, can there be a congenital flexion?

DR. SKENE.—I believe that congenital flexion of the organ occurs, and I am surprised to find the gentleman doubting it, and basing that doubt on the presence of the *arbor vitæ*; for in the infantile uterus it is always present to the fundus.

DR. JACKSON.—I can hardly conceive how a uterus can be flexed congenitally, and if flexion does exist believe that it is of the cervix itself. I have never seen the slightest indications of flexion in the new-born uterus.

DR. WILSON remarked that he had examined a large number of uteri, and that he had not yet seen an ante flexed uterus in the virgin.

The Society then adjourned to meet at 10 A.M., June 1, 1877

Third Day—Morning Session.

The Society was called to order at 10 A.M. by the President. The first paper was read by DR. WILLIAM GOODELL, of Philadelphia, upon,

VAGINAL OVARIOTOMY.

The Doctor began by giving a detailed history of his case, and followed with a brief reference to all the cases of the kind that had been reported, eight in number, and all occurring in this country. The first was recorded by Dr. T. G. Thomas, of New York. The notes of a case, antedating all the others, and in which the operation was performed by Dr. W. T. Atlee, of Philadelphia, had never been published.

Dr. Goodell's case had taught him important lessons, some of which were the following :

Removal of the fluid from the cyst by means of an aspirator was not without danger. Never tap a polycyst. Septicemia or peritonitis was not an obstacle to the removal of the cyst. Thorough cleansing of the abdominal cavity was required. There was great need of thorough drainage in some cases of ovariectomy.

He was loath to try securing the pedicle with anything except the ligature.

The scope of vaginal ovariectomy was necessarily limited. There were certain conditions in which it could be resorted to with greater advantage than the ordinary method. There had been no fatal cases reported where the operation has been performed by this method.

The chances of infection were not so great. He should feel warranted in the future in extirpating an ovarian cyst, of small size and free from adhesions, in the manner described.

The paper being open to discussion, the President called upon Dr. Kimball, of Lowell, Mass.

DR. KIMBALL remarked that he had had no experience in the performance of the operation which had just been described. The paper, however, he regarded as an important one, and one which presented to the profession some very important ideas. He could readily understand how that method of operating was to become more generally adopted than it had been heretofore. There was one case to which Dr. Goodell had not made allusion ; it was one which had occurred in Lowell a few months ago. Dr. Kimball was not able to give the details of the case, but there was one fact connected with it which he would mention. The diagnosis was not fully established, and the operation was commenced, as those operations oftentimes were, upon an uncertainty in diagnosis. The operation was commenced, the ovarian

tumor extracted through the opening in the vagina, ligated and removed, but in connection with it there was a troublesome hernia, and it was with a good deal of difficulty that the small intestines were returned to the pelvic cavity. They were, however, returned and the patient recovered. He could conceive that such a condition might seriously complicate this form of operation. There was one advantage in connection with this operation, and allusion had been made to it, which was important, namely, the facility which it gave for making as nearly complete drainage as possible. That was an important point in connection with all operations for the removal of ovarian tumors, and it was a matter that could be discussed with a great deal of interest. He was satisfied that a large proportion of the unsuccessful cases of ovariectomy were the result of imperfect drainage; in other words, the result of septicemia.

DR. NOEGGERATH, of New York, remarked that he had often performed operations for the treatment of ovarian cyst through the vagina, but he had never removed an ovarian cyst through the vagina. He had treated the largest kind of ovarian cysts by making an incision into them through the vagina, and then attaching the wall of the cyst to the vaginal wall by sutures, and thus establishing a permanent drainage. He had performed another operation through the vagina, which had, in his hands, avoided the operation of vaginal ovariectomy. He had treated about ten cases in which the cyst was of the size of a walnut, of a hen's egg, of a goose egg, by introducing a hypodermic syringe, very carefully constructed and emptying the cyst.

He had been thus far so satisfied with the operation that he had not had occasion to perform ovariectomy through the vagina for the cure of small cysts. It might be that the next case would not be cured in that manner, and that he would be obliged to perform vaginal ovariectomy.

DR. CHADWICK, of Boston, remarked that there were one or two points to be considered in connection with the operation which were important, although perhaps not sufficient to warrant discarding it. The first was with reference to diagnosis; it must be a matter of considerable difficulty in connection with a small tumor, such as could be removed through the vagina. All had met with cases of pelvic effusion, cysts of the broad ligament, dropsy of the tubes, and other similar conditions, in which the differential diagnosis could hardly be made until the tumor was removed; certainly not until the incision had been made and one or two fingers introduced, and hardly possible before the vagina had been incised. Another point was with reference to the danger and difficulty of arresting hemorrhage, and certainly that was a very grave objection.

Another point was, that this operation led to early removal of the tumor before it had grown to a size sufficient to render the peritoneum "callous," a great advantage pointed out by Dr. Spencer Wells. Opening through the vagina would secure drainage in most cases, unless the incision closed by first intention; but with regard to drainage he differed with the views that had thus far been expressed. It was Dr. Chadwick's opinion that the fluid which was poured out during the inflammatory process was not the fluid which we wished to get rid of, but it was the effusion which we wished to retain; it was a conservative act upon the part of nature to prevent adhesions of the intestines with each other and with the important pelvic organs, the uterus and bladder. That suggestion was purely theoretical, but Dr. Chadwick regarded it as worthy of consideration.

DR. LUSK, of New York, referred to the history of a case which he supposed was one of the number to which allusion had been made by Dr. Goodell. In that case it was a question whether it was one of ovarian cyst or a hematoma. To assist in settling the question a moderately fine aspirator needle was introduced and fluid removed, which showed that it was undoubtedly an ovarian cyst. Two days after the operation the patient died. An imperfect post-mortem examination showed that the case was one of multilocular ovarian cyst, and the pelvic cavity contained a full quart of grumous blood. The question was raised whether the blood escaped through the small puncture made by the needle of the aspirator.

DR. GOODELL remarked that he did not refer to Dr. Lusk's case when speaking of death following the use of the aspirator, and that his case (Dr. L.'s) made the sixth in which fatal result had followed the use of the needle in connection with tapping ovarian cyst.

With respect to the objection raised by Dr. Kimball, Dr. Goodell remarked that he did not specially advocate the operation of vaginal ovariectomy, but at the same time did not regard the objection with reference to prolapse of the intestines as being very valid. In all the cases recorded there was only one in which mention was made of the intestines having appeared at the opening in the vagina, and in that case there was no difficulty in returning them and keeping them back. Indeed, it was a question whether the intestines were ever found in Douglas's pouch, except as the result of pathological condition. Dr. Goodell was aware that Dr. Noeggerath did not perform vaginal ovariectomy, and, had he undertaken any other operation than the one performed, he should have removed the cyst by making the vaginal incision and stitching the walls of the cyst to the edges of the opening in the vagina.

With regard to difficulty of diagnosis, he accepted Dr. Chadwick's suggestion, but in his case diagnosis had been made upon microscopical examination of the fluid contained in the sac. The examination was made by Dr. Tyson, of Philadelphia, and a full account given of it in the body of his paper.

With reference to the suggestion regarding the presence of fluid in the pelvic cavity, he was highly pleased, and he was not sure that Dr. Chadwick was not right. But he did not think that the vaginal section would be a bar to the preservation of that fluid. A few stitches would have closed the opening in his case, but he was compelled to leave it free because of the lodgment of so much fluid in the pouch.

DR. PEASLEE remarked that, as a matter of history, it was due to Dr. Thomas to say that he was the first to deliberately plan and carry into effect the operation under consideration—namely, vaginal ovariectomy.

BATTEY'S OPERATION—REMOVAL OF THE OVARIES.

DR. ROBERT BATTEY, of Rome, Ga., presented the claims of his operation and submitted the following propositions:

1. In those cases in which there is absence of the uterus, and in which life is injured and health destroyed by reason of that deficiency, the removal of the ovaries is at once possible and the only means of permanent relief.

2. In cases in which the uterine cavity or the vaginal cavity is obliterated and cannot be restored by surgery, if grave symptoms be present, the removal of the ovaries becomes the last and only resort, and may be possibly invoked in the case.

3. In cases of insanity and severe epilepsy depending upon uterine and ovarian disease, the operation is justifiable as a last resort, and one to be employed after all other means of cure have utterly failed.

4. In cases of long and protracted physical and mental suffering dependent upon nervous and vascular conditions and perturbations which have resisted all means of cure, the justifiableness of the operation is to be conscientiously considered by the practitioner in each case.

DR. TRENHOLME, of Montreal, added a fifth indication for the operation—namely, those cases in which severe and exhausting hemorrhage occurred in connection with the menstrual periods, and which resisted all forms of treatment. The Doctor then gave an account of the two cases in which he had performed the operation. An account of them can be found in the first volume of Transactions of the Society. He indorsed Dr. Battey's operation, and believed that it was justifiable in the instances to which Dr. Battey had referred, and also in others.

DR. PEASLEE, of New York.—Mr. President, as I shall feel it my duty to criticise as well as commend the operation, I cannot begin what I have to say without expressing my admiration and respect for the author of this operation in taking the course he has with regard to it.

The question is, is there a field for the operation called Dr. Battey's operation? I can say at the outset I adopt fully Battey's first two conclusions. The others I should adopt with some modification. There is a proper field for this operation, and I regard it as a great advance in surgery.

In order to make my ideas clear upon the subject, I shall divide the cases in which the propriety of the operation is to be considered into two classes:

First. Those women who have no vice of conformation at all; and

Second. Those who have some abnormal development.

First, then, with reference to those who have a perfectly abnormal development. In the first place, I do not think it a proper field in any case of this kind. In women who have neared the period of menopause, we had better wait than to incur the risk of an operation of this kind. In that class of cases, then, I would reject the operation. That is a general proposition.

Secondly, confining my attention to those women who are under forty years of age, this limitation is one of convenience, I should say. I would not perform the operation for mere ovarian pain. For we have first to ask, how severe is that pain? Is it not exaggerated? Above all, we have to ask, is the woman in the habit of eating opium? There is no habit so easy to be acquired as that of taking opium under these circumstances, and the question arises, no matter how severe the pain is apparently, is the pain actually dependent upon the condition of the ovaries, or is it due to the peculiar condition produced by the opium, and arises because the woman has not had her usual quantity of the drug? The formation of the opium habit is more common in connection with ovarian irritation than with any other condition.

With regard to the first class of cases, I wish to say that if the mind begins to fail, and we can believe that it is the present condition of the ovaries which causes that progressive failure, I believe it is our duty to interfere and remove the ovary or ovaries.

In considering the other class of cases I shall have but little to say, because Dr. Battey has covered that ground himself.

If the woman has a vice in conformation, such as no vagina or uterine cavity at all, and still has ovaries and a menstrual

molimen occurring nearly every month, always attended by severe pain, and progresses until the mental faculties begin to be affected, we have a clear case for the operation. In such cases no surgical operation can be performed by which she can be made to menstruate normally, and yet she possesses ovaries which evidently will ruin her in time, perhaps make her epileptic, perhaps idiotic, and if no remedies can be used which will remove the symptoms, even palliatively, I should consider it my duty to remove the ovaries. It is upon that principle that I operated in the case already published in the first volume of our Transactions.

We have, then, Mr. President, a field for Battey's operation, and I have endeavored to define, according to my opinion, just what are its boundaries.

Dr. Peaslee then described the mode of operating. For himself he should prefer laparotomy, as in his former operation.

DR. PARVIN, of Indianapolis, remarked that he had never performed the operation, but that it had seemed to him there were some important questions involved which must be settled before it could receive a general professional endorsement.

(1.) Will menstruation certainly be arrested by removal of the ovaries? Some had advocated the theory that menstruation occurred independently of the ovaries, and it was in view of that, that the question was made. Neither Dr. Battey, nor himself, accepted such view; still it was a proper question.

(2.) Was the operation possible in some of the conditions in which it was advised, where the organs were surrounded by the products of inflammation, etc.?

(3.) Had the mortality been such as would not make us hesitate with regard to its performance.

DR. GOODELL, of Philadelphia, remarked that he endorsed Dr. Battey in most of his statements. He, however, thought there was danger of the operation being abused.

Reference was then made to two cases in which he had advised the operation, and yet the remarks of Dr. Peaslee regarding neuralgia had rather staggered him regarding its propriety. Still he could not help thinking that with the removal of the ovary (a prolapsed one) he should remove the cause of the trouble.

DR. SKENE, of Brooklyn, remarked that there could be no doubt in the minds of the profession as to the position of Dr. Battey himself on the roll of honor, if there were any doubt as to the position of his operation.

In conclusion he remarked that time and more operations, carefully recorded by judicious, conscientious surgeons, were

needed before we came to a final decision regarding this most important and interesting operation.

DR. NOEGGERATH, of New York, remarked that the same operation performed by Dr. Trenholme had been performed already twice under the same circumstances by Prof. Hegar, in Germany. The two cases were very peculiar. The indications for the operation were the same in both cases; severe hemorrhage from an intermural, partly subperitoneal, fibroid, which could not be controlled by any means known to science. Prof. Hegar considered the operation of normal ovariectomy so much less dangerous than the operation for the removal of the uterus that he preferred to remove both ovaries in both cases. Both operations were performed last year. In one instance, at the next menstrual period, a severe hemorrhage occurred, but since that time there was no menstruation. The patients were actually cured of the symptoms for which they were treated. He therefore considered the operation of normal ovariectomy as admissible in cases in which the fibroid could not be removed by the larger capital operation, and which certainly was more dangerous. We were not yet in a position, however, to give our judgment, and all that had been said in the course of the discussion had been mostly in the way of conviction. It remained for us to go on making careful observations in the same field. He agreed with the remarks of Dr. Peaslee entirely, and believed the field for the operation would be enlarged in an exact ratio as the operation became less dangerous. He disagreed, however, with Dr. Peaslee that the operation would be less dangerous if performed by the ordinary suprapubic section. From his experience the danger from peritonitis increased with every inch the wound was removed from the labia. His advice, therefore, would be to perform the operation, in all these cases in which the ovary was to be removed, through the vagina. He would suggest to Dr. Battey that he could render his operations less dangerous by opening the cul-de-sac with an instrument which made no wound. It could be done with a large trocar with a round point, and if that did not give sufficient room the instrument could be followed by another which dilated the tissues. In such an operation there was no hemorrhage whatever, and no danger.

DR. BATTEY remarked that he felt nearly overwhelmed by the kindness manifested by his brethren, and that he had always relied upon the everlasting truth for his justification before the medical world. With regard to the amount of suffering which the patients had, it was an extremely difficult thing to be decided, and so with regard to insanity, hemorrhage, etc., and the whole question resolved itself into one of conscience on the

part of the physician. It was impossible to give any sharp and well-defined lines for guidance. With reference to neuralgia of the ovaries, he agreed with Dr. Peaslee in what he had said upon that subject. With regard to the removal of the ovaries he believed that one should not be condemned until we were prepared to condemn both. With reference to the mode by which the ovaries should be reached in view of peritonitis and adhesions, he had been of the opinion that the vaginal route was to be preferred, and had selected it in all his cases, but he was now prepared to say that that opinion should be reviewed. The ideas of Dr. Noeggerath regarding the sensitiveness of the peritoneal sac Dr. Battey regarded as correct. If, however, there was reason to believe that extensive adhesions were to be encountered, the abdominal route was to be preferred. With reference to Dr. Parvin's question concerning the arrest of menstruation, it was to be noticed that he had not used the word menstruation at all. It was a matter of indifference to him whether menstruation was affected or not. He performed the operation for the purpose of removing the nervous and vascular phenomena which were destructive of life, health, and happiness, and integrity of the intellect. He cared not whether the woman menstruated or not prior or following the operation. With reference to Dr. Noeggerath's suggestion concerning the use of the trocar and dilating the opening to avoid hemorrhage, Dr. Battey remarked that he had performed his operation through the central line, making his incision with the scissors, and removing the ovaries by means of the *écraseur*, and that the loss of blood had been very small; sometimes there had been nothing more than a mere oozing from the incision.

The discussion being closed, Dr. H. I. BOWDITCH was elected a member by invitation, after which the Society adjourned, to meet at 3 P.M.

Third Day—Afternoon Session.

The Society was called to order by Vice-President DR. BYFORD, of Chicago.

SUBSULPHATE OF IRON AS AN ANTISEPTIC IN SURGERY OF THE
PELVIS.

DR. WILSON, of Baltimore, presented a paper upon the above subject, in which it was maintained that the subsulphate of iron was one of our best antiseptics in all surgical operations where union by first intention was not expected. For example, in ovariectomy, in cases in which extensive adhesions, parietal and visceral, had been present and had been separated, and where there had been considerable oozing, after the hemorrhage had

been completely checked, all the raw surface should be liberally coated with the subsulphate of iron in the proportion of one part to three of water. It should be applied as an antiseptic, and not as a styptic. He was of the opinion that if coating such raw surfaces with a dilute solution of Monsel's solution was more extensively practised, that there would be a less number of deaths from septicemia than occurred after the ordinary method of treatment. In like manner it was recommended as an antiseptic in all operations about the pelvis, such as division of the cervix, removal of intra-uterine fibroids, after the use of the curette in the removal of fungoid growths, etc., etc., after the hemorrhage had been arrested; wash out the uterus, the cervix, the vagina, or whatever cavity it was that gave a raw surface, first with hot water, and then with a dilute solution of subsulphate of iron. The Doctor believed that if that was practised regularly there would be much less of septicemia than occurred under the usual methods of management.

He almost never applied the subsulphate of iron to the cavity of the uterus without combining it with glycerine. Unless so combined, according to his experience, hemorrhage had been increased rather than diminished, when the iron was introduced and came in contact with the blood. Such was the result because the iron acted as a local irritant in the cavity of the uterus, and thereby increased the tendency of blood to the part, consequently the hemorrhage. Where the combination of *iron with glycerine* came in contact with the blood such hard masses were not formed as where the blood came in contact with the iron diluted with water, hence the less irritation produced by such masses. He had divided the cervix backwards ninety-nine times, and he always, after all hemorrhages had been arrested, applied a pledget of cotton, dipped in a solution of subsulphate of iron and glycerine, between the lips of the wound, and left it there, not as a styptic, for all bleeding was checked before the cotton was applied. He used it for the same purpose, after all severe operations about the vagina and the rectum, especially after the removal of hemorrhoids and polypi of the rectum, and after operation for fistula in ano. These operations had some bearing upon gynecology, and in them all he employed the subsulphate of iron as an antiseptic and not as a styptic.

TETANUS AFTER OVARIOTOMY.

DR. PARVIN, of Indianapolis, reported a case. Nothing special was noticed either in the history of the case or in the operation. On account of the adhesions about two inches of omentum were removed. The pedicle was secured by a clamp.

Patient left, after the operation, in about as good condition as usual. Progress for four days encouraging; pulse 96, temperature normal, appetite good, and passing urine voluntarily. Abdominal stitches removed except those securing pedicle. On the fifth day, pulse 100, symptoms of tetanus appeared, first by pain and stiffness of the neck and some rigidity of the muscles of the face, and the patient died on the following day.

He had made diligent search and had found only eight cases of the kind recorded, his own being the first recorded in the United States. Since he had arrived in Boston he heard that Dr. Kimball, of Lowell, had had a case of the kind, which made the ninth. The pathology, therapeutics, and prophylaxis of tetanus presented a great gap, which future medicine would doubtless fill.

DR. KIMBALL, of Lowell, remarked that the case which Dr. Parvin referred to occurred in his practice about seven years ago, and in a patient residing in the city of Lawrence. Ovariectomy was performed for the removal of a multilocular cyst. There was nothing peculiar in the operation except that the tumor was very large, weighing 50 or 60 pounds, and there were extensive adhesions, the most important of which were the adhesions to the omentum. The hemorrhage was considerable; was more than could be controlled by ligatures, and he was induced to cut pretty much all of the omentum away. He divided it into several sections, ligatured each, and then, by one general ligature, embraced the whole in one mass, thus making a pedicle of the omentum. The pedicle of the tumor was large, was brought forward as far as possible in the wound, and there secured. It was so large that he was not able to secure it with the clamp. The pedicle of the omentum was treated in the same manner—the space between them being about four inches. No unfavorable symptoms appeared for ten or twelve days, and then while the patient was sitting up in bed and eating her breakfast, she first began to feel some difficulty in using her jaw. The tetanic symptoms increased rapidly and terminated in death.

DR. CHADWICK, of Boston, referred to a case in which tetanus occurred after he had extirpated the uterus for the removal of a large fibroid. Tetanic symptoms set in on the seventh day, and the case terminated in death. The convulsions were so severe that the sutures in the abdominal walls were broken, and nearly all the intestines were extruded through the opening. He was of the opinion that that occurrence made no difference as to the final result. In studying the treatment after the operation, he was not able to say that he should manage the next case differently, nor could he see anything

in it that should give rise to tetanus, unless his anxiety regarding the care of the purulent secretion had prompted him to do too much in the way of treatment. Every two or three hours he exposed the wound, and carefully absorbed all the purulent secretion that was present, and he had questioned himself as to whether such excessive care made any difference with reference to the final result in the case. At the autopsy there were no traces of inflammation; no traces of effusion of lymph into the peritoneal cavity, thus showing that the operation had been passed through without the occurrence of any of the natural accidents.

SARCOMA OF THE OVARIES.

DR. WASHINGTON L. ATLEE, of Philadelphia, presented a paper upon the above subject, which consisted of the notes upon four cases and accompanying comments.

The disease was so rare, said Dr. Atlee, that it was the duty of every one to record his experience in connection with it, no matter how limited it might be.

There were certain points of similarity in his four cases to which he directed special attention.

All occurred in married ladies of about the same age—thirty to thirty-two; in all, after having borne children, one to three; in all within twelve to eighteen months after the last parturition; in all, the tumors were of rapid growth, and had the peculiar feeling of an ordinary cirrhotic liver. All the tumors were sulcated and had the pedicle inserted in a peculiar fan-shaped manner; in all, the tumors were free from adhesions; in all, the tumors were pedunculated; and in none were there any uterine complications. Of over 1,300 cases of pelvic tumors, of which he had records, only four were sarcoma of the ovaries.

The Doctor then passed to the question of differential diagnosis, and pointed out the differences between the symptoms of sarcoma of the ovaries and subperitoneal or pedunculated extra-uterine fibroid, multilocular ovarian tumor, extra-uterine fætation, plastic deposits in the abdomen, and the so-called adenoma of the ovary. Dr. Atlee, under this head, made an extensive review of the case reported as adenoma of the ovaries by Dr. T. G. Thomas, of New York, in the *American Journal of Medical Sciences*, for January, 1876.

The characteristics of sarcoma of the ovaries were so marked that it would seem possible to arrive at a correct diagnosis before the general system had become tainted. If so, surgical interference should be prompt, and afforded the best means for obviating a fatal termination. He regarded malignant tumors

in many cases as entirely local, and if extirpated before contamination of the general system had occurred, permanent benefit might follow, if the removal was fortified by the use of medicines which prevented the further formation of heterologous deposits.

To fulfil such an indication, he believed that arsenic given in small doses and continued for a long time, was a most admirable remedy; its specific effects as an alterative and a tonic were regarded as most excellent. It was true that arsenic would not cure a cancerous growth, and yet, if that growth was excised, arsenic would so affect the future appearance as to prevent, in many instances, similar formations from being reproduced. The daily use of three drops of Fowler's solution should be continued for three years. Early removal of sarcomatous ovaries offered as good results as removal of malignant tumors in other parts of the body.

DR. ENGELMANN, of St. Louis, discussed the paper from a histo-pathological standpoint, and regarded the tumors in all of Dr. Atlee's cases as malignant growths affecting the ovary, and of the carcinomatous variety. That opinion was reached from a review of the reported microscopical examinations.

DR. PEASLEE, of New York, remarked that he had never seen a case of adenoma of the ovary. With regard to the case which Dr. Thomas had reported, he was not able to understand why Dr. T. should call the tumor adenoma, since in three out of four of the examinations which were made, the element of malignancy was admitted, either sarcomatous or carcinomatous. Adenoma was not necessarily malignant.

DR. LYMAN, of Boston, read a biographical sketch of Dr. Charles E. Buckingham, of Boston, late Fellow of the Society.

THE PRESIDENT then delivered his closing address, and introduced Dr. E. R. Peaslee, of New York, the newly-elected President of the Society.

DR. ALBERT H. SMITH, of Philadelphia, moved that a vote of thanks be extended to Dr. Barker, as the first President of the Society. Unanimously carried.

The following papers were read by title:

The Pathology and Treatment of Puerperal Eclampsia, by Prof. Otto Spiegelberg, of Breslau, Prussia.

The Relation Existing between Pregnancy and Phthisis, by Dr. William L. Richardson, of Boston.

The Value of Electrolysis in the Treatment of Ovarian Tumors, as seen in the Light of Recent Experience, by Dr. Paul F. Mundé, of New York.

Congenital Absence and Accidental Atresia of the Vagina: Mode of Establishing a Canal and Effecting a Removal of Re-

tained Menstrual Blood, by T. Addis Emmet, M.D., of New York.

The President then declared the Society adjourned to meet at Philadelphia on the second Wednesday of September, 1878.

The following officers were elected for the ensuing year: President, Dr. Edmund R. Peaslee, of New York; Vice-Presidents, Dr. William Goodell, of Philadelphia, Dr. Isaac E. Taylor, of New York; Secretary, Dr. James R. Chadwick, of Boston; Treasurer, Dr. Paul F. Mundé, of New York; Council, Dr. W. L. Atlee, of Philadelphia, Dr. W. H. Byford, of Chicago, Dr. T. Addis Emmet, of New York, Dr. A. J. C. Skene, of Brooklyn.

The following gentlemen were elected Fellows: Dr. Gilman Kimball, of Lowell, Mass.; Dr. A. Dunlap, of Springfield, Ohio; Dr. A. Reeves Jackson, of Chicago, Ill.; Dr. Ellwood Wilson, of Philadelphia, Pa.; Dr. H. J. Garrigues, of Brooklyn, N. Y.; Dr. John Goodman, of Louisville, Ky.; Dr. John P. Reynolds, of Boston, Mass.; Dr. Thaddeus A. Reamy, of Cincinnati, Ohio.

Dr. John L. Atlee, of Philadelphia, Dr. John C. Dalton, of New York, Professors Depaul and Pajot, of France, and von Scauzoni, of Germany, were elected Honorary Fellows.

(The Reviews or Notices of all Books received to date had been written and the majority of them were in type, when it was again found necessary to postpone them. They will all appear without fail in the January Number.

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